BILLS AFFECTING INTERSTATE COMMERCE

HEARINGS

BEFORE THE

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE
OF THE HOUSE OF REPRESENTATIVES

SIXTY-FOURTH CONGRESS
FIRST SESSION

ON

H. R. 9047, 9132, 9216, 10485, 11243

SAFETY ON RAILROADS FOR PASSENGERS AND EMPLOYEES, AND HOURS OF SERVICE AND INCREASE OF PAY OF INSPECTORS

APRIL 18 TO MAY 5, 1916

WASHINGTON
GOVERNMENT PRINTING OFFICE
1916

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BILLS AFFECTING INTERSTATE COMMERCE.

House of Representatives,
Committee on Interstate and Foreign Commerce,
Tuesday, April 18, 1916.

The committee met at 10 o'clock a. m., Hon. William C. Adamson (chairman) presiding.

The Chairman. We will begin hearings this morning upon the following bills:

The bill (H. R. 9047) introduced by Mr. Decker, "To promote the safety of employees and travelers on railroads by requiring common carriers engaged in interstate commerce by railroad to afford a safe and sufficient clearance between structures located on their roadways and locomotives and cars passing over their lines, and for other purposes";

The bill (H. R. 9132) introduced by Mr. Dewalt, "To amend section 3 of an act entitled 'An act to promote the safety of employees and travelers upon railroads by limiting the hours of service of employees,' approved March 4, 1907";

The bill (H. R. 9216) introduced by Mr. Cullop, "To amend sections 2, 3, 4, and 5 of an act entitled 'An act to promote the safety of employees and travelers upon railroads by limiting the hours of service of employees thereon,' approved March 4, 1907";

The bill (H. R. 10485) introduced by Mr. Sims, "To promote the safety of employees and passengers on railroads engaged in interstate or foreign commerce;" and

The bill (H. R. 11243) introduced by Mr. Sterling, "To amend an act entitled 'An act to promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their locomotives with safe and suitable boilers and appurtenances thereto,' approved February 17, 1911."

We will give you gentlemen as much time as we can this morning, and the hearings on these bills will be resumed on Thursday, April 27, 1916, at 10 o'clock a. m.

Mr. H. E. Wills, assistant grand chief engineer and national legislative representative Brotherhood of Locomotive Engineers; Mr. W. M. Clark, vice president and national legislative representative Order of Railway Conductors; Mr. Val Fitzpatrick, vice president and national ligislative representative Brotherhood of Railroad Trainmen; and Mr. P. J. McNamara, vice president and national legislative representative Brotherhood of Locomotive Firemen and Enginemen, appearing.

Mr. Clark. Mr. Chairman and gentlemen, I wish to be heard on this clearance of obstructions bill (H. R. 9047). We have prepared a statement which gives the views of the representatives of the railway employees, and, in order to save time, with your permission I will read it to the members of the committee.

The CHAIRMAN. You may proceed.

Mr. CLARK. This statement has been prepared in connection with the clearance of obstructions bill. The purpose of the bill, as stated in the title, is to promote the safety of employees and travelers on railroad by requiring common carriers engaged in interstate commerce by railroads to afford a safe and sufficient clearance between structures located on their roadways and locomotives and cars passing over their lines. The railroad employees feel there is a very real need for this legislation.

The Interstate Commerce Commission has for a number of years published statistics showing the casualties to persons on account of coming in contact, while riding on cars, with overhead bridges, tunnels, signal apparatus, or any fixed structure above or at the side of the tracks, and the number of deaths and injuries due to this cause would reach an enormous aggregate; and tracing them from year to year since the commission began to issue the accident bulletins, in which the statistics are made public, it is found that there has been no marked change in the number of such casualties except when business has fluctuated and the number of men employed and persons using the railroads has altered. It is evident from the statistics, as well as from our practical knowledge of the facts, that the railroad companies have not appreciated the seriousness to the railroad employees of the dangers incident to the unsafe clearances maintained on many roads. The size of locomotives and cars has been constantly increased, while tunnels have not been enlarged and structures have not been set back from the track; and the relation of the structures to the track has remained practically at a standstill, while the equipment has been constantly increasing in dimensions, and as a result the men who are required to operate the trains, and in the performance of their duties must often ride on top of the cars, and otherwise expose themselves to obstructions, have been subjected to greater hazards on this account.

The free space which should be maintained has been squeezed beyond the limits of safety and efficiency in the effort of companies to increase the tonnage and at the same time refrain from expending a needed amount in the accommodation of their facilities to the changed conditions.

We have made from the records of the Interstate Commerce Commission a brief summary of casualties to persons due to coming in contact with overhead and side obstructions for a five-year period from June 30, 1911, to June 30, 1915, which we desire to leave with the committeee and have printed in the record. It shows that during this period 661 persons have been killed and 8,369 injured on steam and electric roads. Of this number, 35 passengers and persons riding under contract were killed and 237 injured, while 400 employees were killed and 7,614 injured. The greatest number of killed and injured in any one year occurred in 1913. There was a reduction in 1915, but this decrease in the number of casualties corresponded with the general reduction in force on account of the general depression of business, which threw so many trainmen throughout the country out of work.

Mr. HAMILTON. Does your statement show what number of those killed and injured were killed or injured by reason of insufficient clearance?

Mr. CLARK. We have a list showing that, and I will come to it later on. This [indicating] is the list referred to in my prior remarks.

Mr. PARKER of New York. Do you give in your statement the total number of employees, so that we can get at the percentage of those injured?

Mr. CLARK. While it does not give the total number of employees, it gives the number of engineers, for instance, who were injured by reason of not having sufficient clearance for them to put their heads outside of the cabs. I think Mr. Fitzpatrick, who is representing the trainmen, has that data.

Mr. FITZPATRICK. Do you mean the total number of employees?

Mr. PARKER of New York. Yes. I would like to have that information so I can figure what percentage of people were hurt.

Mr. FITZPATRICK. The total number of employees in the service, including engineers, firemen, conductors, and trainmen, according to the last report of the Interstate Commerce Commission, was 313,000.

Mr. CLARK. The summary I have referred to is as follows:

Casualties to persons due to coming in contact with overhead and side obstructions, 5-year period, June 30, 1911, to June 30, 1915.

STEAM ROADS.

Year.	Passengers, etc.		Employees on duty.		Employees not on duty.		Other persons not trespassing.		Trespassers.		Total.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
1911	6	35	76	1,510	2	13	1	9	30	81	115	1,648
1912	7	27	77	1,523	1	12	1	3	34	70	120	1,635
1913	5	29	94	1,835	2	9	1	7	44	99	146	1,979
1914	5	29	89	1,490	3	5	1	2	46	100	144	1,626
1915	6	28	45	1,083	....	10	....	6	68	124	119	1,251
Total	29	148	381	7,441	8	49	4	27	222	474	644	8,139

ELECTRIC ROADS.

Year.	Passengers, etc. Killed.	Injured.	Employees on duty. Killed.	Injured.	Employees not on duty. Killed.	Injured.	Other persons not trespassing. Killed.	Injured.	Trespassers. Killed.	Injured.	Total. Killed.	Injured.
1911	1	13	3	18	....	......	....	2	....	......	4	33
1912	2	14	....	22	....	1	....	......	....	3	2	40
1913	2	16	6	34	....	......	....	......	....	......	8	50
1914	1	25	2	28	....	......	....	......	....	3	3	56
1915	....	21	....	21	....	......	....	......	....	......	....	42
Total all roads	35	237	392	7,564	8	50	4	29	222	480	661	8,360

The organizations have had the subject of clearance prominently before them for many years. It is brought home to them every day. The members of the organizations are being killed and injured on account of these dangerous conditions, which they know to exist and which they have asked repeatedly to have remedied.

We have now reached the point where it is believed that the companies, of their own volition and on having these conditions called to their attention through committees of the organizations and by reference to accident bulletins, will not take the action which the situation imperatively demands, and the employees have now turned to Congress for relief.

Once before the question of clearance was the subject of consideration with a view to securing a national law. There was introduced in the Senate on June 23, 1910, by Senator La Follette, of Wisconsin, a bill (S. 8825) on this subject. A similar measure has been presented to the House by Mr. Martin, of Colorado. There was at the time considerable discussion in the public press with reference to the proposed legislation. The bill was vigorously opposed by the railroad companies, and considerable data were secured by them to support their claim that its enforcement would result in such an enormous cost that its enactment would not be justified. They carried their contention to the White House, and President Taft was sufficiently impressed with the seriousness of their claim that he referred to the subject in a message transmitted to Congress on December 6, 1910, in which he said that the entire removal of outside clearances would be attended by such enormous expense that some other remedy must be adopted, and suggested that the Interstate Commerce Commission be requested to make a special report upon such injuries and the best method of reducing them. The legislation was suppressed, but the employees were strongly hopeful that on account of the publicity given the matter and the showing made that conditions were bad on many roads, marked improvement would result, and we have since that time been waiting to see if there would not become manifest a more general intention to remedy the situation with reference to clearances.

In a number of States the legislative boards of the organizations have brought local conditions to the attention of State legislatures and a number of laws have been passed, some dealing with overhead wires and other structures, and a variety of dimensions have been prescribed. In the State of Illinois the matter was referred to the public utilities commission and a ruling has been issued by them, copy of which we are leaving with the committee. In Arkansas, Connecticut, Michigan, New Hampshire, Ohio, Oregon, Rhode Island, Vermont, Wisconsin, and Wyoming statutes have been enacted affecting various phases of the clearance question.

To illustrate what is in the minds of our members we cite a letter which was received recently from the chairman of one of our general committees on an important line of railroad. He said:

> Recently we had a brother on one of our fast passenger trains killed by being struck with a mail crane. Before his lifeless body was discovered by the firemen (as his head was hanging out the side window of cab) the train had gone a considerable way without guidance. When the arms of these racks are set to accommodate a mail sack, they are dangerously close to a passing train. Since their establishment the power and equipment has grown to such an extent that there is very little clearance between them and a passing train, and are thus a constant menace to life. This is the third brother meeting death on this line in this manner within the last 10 years, and the object of this letter is to get your advice as to the necessary procedure to obviate this danger. It has been brought to the attention of the company through the safety committee, but no action has been taken, hence this appeal for information. Is it not possible to have a national law enacted governing this condition? Employees in train service on the ——— are very much exercised over the matter at present, and any assistance or information you may be able to render will be greatly appreciated.

Mr. Esch. In that connection, let me ask you this question: Does not the Post Office Department control the form and character of the mail cranes used? Does not the Government have to ratify the plans of these cranes before they can be installed along the line of the railroad?

Mr. CLARK. I presume that the Government prescribes the form of the cranes, but so far as the distance at which they are placed from the railroad tracks or cars is concerned, it would seem that the Government would not have any jurisdiction or supervision over that point.

Mr. ESCH. I did not know but what the Government might be partly responsible for those casualties by reason of the fact that they may have adopted some particular form of crane.

Mr. CLARK. If the railroad company prescribes a certain distance at which they shall be placed from the cars, the Government would not undertake to infringe upon that.

Mr. PARKER of New York. If the company prescribes the distance at which they shall be placed, the Government would not be apt to interfere with it or take that distance away?

Mr. FITZPATRICK. I do not believe that the Government has anything to do with that. All that they require is the receipt and delivery of the mail, and they leave all the rest to the railroad company. However, in order that we may inform you specifically on that subject, we will take that question up with the Post Office Department.

The CHAIRMAN. We would be glad to have the result of your investigation.

Mr. HAMILTON. Do those injuries you have referred to result from having the cranes too close to the passing trains?

Mr. CLARK. Yes, sir; and later on I will submit a list showing the number of men who have had their heads knocked off by them.

Mr. HAMILTON. Would they serve their purpose equally well if they were placed at some greater distance from the passing trains?

Mr. CLARK. Yes; it would be necessary to have the mail sack farther from the crane in order for the train to catch it. The trouble is when the crane is set to catch the mail sack, the clearance is very small. It is only a matter of inches. However, I will come to that later on.

Mr. FITZPATRICK. Just to give you the information, and to make that point clear, I will say that all that is necessary is to move the mail crane back a few inches and set the catcher out a few inches farther from the car.

Mr. HAMILTON. As I understand it, the catcher extends out from the car?

Mr. FITZPATRICK. Yes, sir; and all you would have to do would be to have it extend out a few inches more in order to provide sufficient clearance.

Mr. HAMILTON. And it would serve its purpose equally as well?

Mr. FITZPATRICK. Yes, sir; just as well.

Mr. HAMILTON. Has it been tried?

Mr. FITZPATRICK. I do not know that it has been tried, but that is my testimony after running on trains for many years. I might say that I have paid particular attention to mail cranes, because my life was in jeopardy from them.

Mr. DOREMUS. Does your statement show what are the most frequent causes of those numerous accidents you have referred to?

Mr. CLARK. We have a list here showing the number of accidents occurring to men in the engineers' organizations, and showing by what obstructions they were injured or killed.

Mr. DOREMUS. You have all of that?

Mr. CLARK. Yes, sir; and I will come to that later on.

Mr. HAMILTON. Are there not certain particular difficulties in the railroad service that are more frequently the cause of death or injury than any others, or that stand out beyond all the other causes?

Mr. CLARK. Well, this is one of the conditions which confronts the railway employees, and it is a very serious one.

Mr. HAMILTON. For illustration, take the causes you have mentioned. I had in mind whether some of those things were a more frequent source of death and injury than others. Does your list there group the casualties in such a way as to indicate whether or not certain things are particularly dangerous? I would like to have that information with a view to getting some place to start from.

Mr. CLARK. They are all grouped in this list here.

Mr. FITZPATRICK. I will give you full information on that later on.

Mr. CLARK. I will say that Mr. Fitzpatrick has something to say after I get through.

Mr. SIMS. Just proceed in your own way.

Mr. PARKER of New Jersey. Some of the accidents you have talked about were caused by striking mail posts. Now, is that something on another train that they are liable to be struck by when the trains pass one another? Is that something on another train, or is it a stationary object?

Mr. CLARK. The crane that I spoke of is a mail crane. I have a list here showing where some were hurt, for instance, by striking telegraph poles or bridges.

Mr. PARKER of New Jersey. I am talking about mail cranes. Are they standing or stationary objects, or are they on other cars?

Mr. CLARK. What is called a mail crane is an upright post. It has an arm hanging out in this way [indicating]. There is a projection or arm reaching from the top of the crane from which the mail sack is suspended, and then there is a kind of hook or grapple iron that is turned by the operator in the mail car. That hook or grapple iron reaches out for the mail sack and catches it in the crotch in that way [indicating].

Mr. PARKER of New Jersey. Then the engineer or trainmen would be struck by a standing post, and not by an object on another train?

Mr. CLARK. Yes, sir; that is right.

Mr. COADY. Is that report of casualties you have referred to an official report or is it your report?

Mr. CLARK. The list heretofore submitted appears in the records of the Interstate Commerce Commission.

Edward V. Kapp, passenger road conductor, Philadelphia, Baltimore & Washington Railroad, while in the performance of his duty at or near Lanham, Md., on the Maryland division, on May 3, 1914, as per report of the Interstate Commerce Commission, "while evidently leaning out from side of car in train of passenger extra looking for brakes sticking, he was struck by the intertrack fence, knocked off car, and run over by his own train. This is a standard intertrack fence, being 3 feet 10 inches from gauge line of rail."

William E. Rager, while in the employ of the Pennsylvania lines east, "was crushed between car and cribbing. He had shoved a draft of cars to upper end of track and placed for loading, held on to the first two cars with engine, and coming down in some way or other was

caught between one of the cars and cribbing. At the point that he was caught, by actual measurement, the cribbing just clears a 100,000 pounds capacity steel car 6 inches. The cribbing at this works is built of stone. At some places at these works the clearance is somewhat more, but at no point will it clear a man between the cribbing and cars."

Mr. HAMILTON. What is this cribbing you have referred to? What do you mean by cribbing in that connection? Is it a wall alongside the track?

Mr. CLARK. You have seen coke piled up alongside a railroad track where they run up a kind of crib to retain it.

The CHAIRMAN. The cribbing is to keep it from falling on the track?

Mr. CLARK. Yes, sir.

Mr. HAMILTON. It is a kind of wall?

Mr. CLARK. It would put you in mind of a log house.

The CHAIRMAN. It is called cribbing because people used to build cribs out of logs.

Mr. HAMILTON. They are temporary structures, are they not?

Mr. CLARK. Not necessarily temporary, unless you would call a crib remaining for a number of years temporary.

Mr. STERLING. It would be all the more dangerous if it was temporary, because the men would not have so much knowledge concerning it.

Mr. CLARK. When I go on a little further, I will call your attention to the fact that the companies call the attention of the employees to these dangerous conditions; and if they overlook them, then they are held responsible.

Mr. HAMILTON. In the case of movable obstructions like that, why could not the Interstate Commerce Commission give some direction that would obviate them? Where the danger is perfectly apparent, like that, why could it not be obviated by the Interstate Commerce Commission?

Mr. CLARK. I agree with you, if they had the power.

Mr. HAMILTON. It is not like a permanent obstruction, such as having some building or other permanent structure too close to the right of way. It seems to me that that is something that could be obviated by making a rule.

Mr. WILLS. A number of years ago there was a great amount of correspondence between ourselves and the railroad companies asking them to exercise care in the matter of these temporary structures, and we have letters from them in which they promised to do that if we would not press the bill that has already been referred to here. I refer to the one on which President Taft was appealed to. President Taft said it would cost $440,000,000 to carry out the provisions of that bill. We not only asked, but urgently begged the representatives of the railroads to take some action whereby they would remedy that situation and relieve us from the position that we are in to-day of having to appeal to you for a law. We can show you all that.

The CHAIRMAN. Do not such considerations as the protection of property and the fear of damage suits have any effect in inducing the railroads to try to exercise precautions in that regard?

Mr. WILLS. I am sorry to say that in some directions it seems that they do not, and you, Mr. Chairman, know perhaps better than any other man in this country to-day about that. We have appealed to

you here, and we have gotten laws that have immediately reduced the causes of complaint. As in the case of the boiler-inspection law, for instance, the relief followed almost immediately. That is indicated by the fact that the number killed from that cause in the fiscal year ending June 30, 1912, was 91, while the number killed from that cause in the fiscal year ending June 30, 1915, was 13. That had been in operation for only four years with that result. That is a law we secured from you gentlemen by making our complaints heard. The law has had that effect; it has brought us that relief, and now we are asking, reluctantly asking, for these further laws. We feel that we have been forced to come here and ask for them.

The CHAIRMAN. Is it not strange and unusual that persons who are responsible and liable in damages for the loss of life and property should not take every precaution in the world to protect the life and property in their charge?

Mr. WILLS. I agree with you, but we know by actual experience that it does not always follow.

Mr. HAMILTON. Sometimes these accidents result from the carelessness of people outside of the railroad companies themselves. To illustrate: At Detroit about two months ago there was a case where a building contractor had some structural steel placed too near the railroad track. A trainman was killed as a result of that. In that case, under the Michigan law, settlement was made at a cost of $2,000. That structural steel or iron, or whatever it was, was piled too near the track, and it was obvious that a train could not go by it safely. It was clearly a case of somebody's negligence.

Mr. CLARK. I can see how a condition of that kind might exist; but referring to the statement of the chairman a moment ago, that the railroad companies would naturally try to protect themselves from the results of those accidents, I have in mind a case where a man went to the general manager of a certain railroad company with a little appliance to promote the safety of train operation. It cost quite a considerable sum of money, and I know of my own knowledge that the general manager said: "Why, it is cheaper to kill a man than to put this into effect." That I know, although it has been some time ago.

The CHAIRMAN. But it might have saved the killing of many persons?

Mr. CLARK. Perhaps I was a little bit prejudiced, because I was interested in seeing the safety device that the man was promoting adopted as a protection, and I was not pleased with the general manager's answer.

A clearance bill would be a step in the right direction, as we have had quite a number of trainmen killed and injured in this section of the country by being caught between cars and cribbing and overhead obstructions while working around coal and coke works; and as you know, the major portion of our work in western Pennsylvania is mine work and we are constantly in danger of being struck with some obstruction while working around the mines.

At the recent convention of the Brotherhood of Locomotive Engineers held in Cleveland, Ohio, in May, 1915, the following resolution was presented and unanimously adopted by the delegates:

Whereas an appalling number of railway employees and travelers have been maimed and killed because of insufficient clearance between overhead wires, bridges, tunnels, poles, mail cranes, coal chutes, stock pens, and other structures located along the roadways and engines and cars passing over the lines; and

Whereas the dimensions of the rolling stock are being constantly enlarged, thus increasing the menace of structures which already encroach upon proper clearance limits and constituting new hazards to which the employees and travelers are exposed; and

Whereas although these dangerous conditions which exist on many roads have been repeatedly called to the attention of the carriers themselves and to governmental agencies, there has been no appreciable decrease in the number of fatalities directly due to improper clearances: Therefore be it

Resolved, That it is the sense of this convention that the State legislative boards should endeavor to secure a strict enforcement of existing laws on this subject and the passage of proper legislation in the States where none has been secured; and be it further

Resolved, That this convention strongly favors the enactment of a national law that will require all railroads engaged in interstate commerce to establish and maintain safe and sufficient clearance between their tracks, and between overhead and side obstructions located along the roadways and engines and cars passings over their lines.

Similar resolutions have been passed at the various conventions of the brotherhoods. The convention of the Brotherhood of Railroad Trainmen at Columbus, Ohio, in 1909, passed the following resolution:

Whereas there is a great sacrifice of life and limb of railway employees caused by overhead and side structures being too close to railroad tracks; therefore, be it

Resolved by the Brotherhood of Railroad Trainmen in convention assembled, That we earnestly urge the passage of legislation which will require railroad companies in the future to build such structures at a sufficient distance from the tracks to clear men on the tops and sides of cars.

In 1910, the year following, the convention of the Brotherhood of Locomotive Engineers, held in Detroit, Mich., specifically approved the La Follette bill, which had been introduced in Congress, in a resolution as follows:

As a measure intended to protect the lives of train service employees, we recommend that the proposed draft of a bill providing for clearance of structures along the right of way of railroads submitted by our national legislative representative be approved.

The convention of the Brotherhood of Railroad Trainmen held in San Francisco, 1913, adopted two resolutions upon this subject, as follows:

We recommend the introduction of bills covering the following subjects and urge our legislative representatives to endeavor to secure their passage: Full crews on trains, clearance of overhead and side obstructions, block signal and automatic train control, abolishment of so-called "dinky" and box-car cabooses, a reasonable limitation on the length of freight trains, abolishment of the blacklist, restriction of the loan shark, and semimonthly pay bill.

Whereas it is the practice of certain railways throughout the United States and Canada not to have proper clearances between their tracks; and

Whereas there is considerable reason for complaint because mill and factory tracks are so close together that cars can not be switched without great danger to the men doing the work: Therefore, be it

Resolved, That it be the sense of this convention that there be a more drastic enforcement of all laws that require proper clearance between tracks, both on interstate railways and in mills and factories; be it further

Resolved, That the State legislative boards exercise their utmost endeavors to have the several State railway commissions exercise their full authority to the end that proper clearances between tracks be established.

The organizations are interested in having conditions on the railroads made safer for the public and the employees primarily because they are most directly affected by dangers which are allowed to exist.

It is the lives of our members that are first snuffed out in case of accident.

Mr. HAMILTON. May I ask a question right there? I suppose this matter has been considered, for instance, in England. They perhaps have traveled over some of this road we have under consideration now. What has been done in England, for illustration, to minimize the dangers resulting from insufficient clearance?

Mr. CLARK. Mr. Congressman, I have not the exact data, but Mr. Wills, representing the Brotherhood of Locomotive Engineers, has recently been to England and I assume traveled over the roads in England and can give you that information perhaps better than I can.

Mr. HAMILTON. It seems to me that would be interesting as throwing some light on what course we should pursue.

Mr. FITZPATRICK. Mr. Chairman, I have gone into this matter pretty thoroughly, and I can not state just what the percentages of differences are, yet I can say—and I will try to give you the facts on this subject—that in England the casualties on railroads are almost nil or nothing as compared with the casualties in America.

Mr. HAMILTON. That is my understanding and that is why I asked the question. I wondered what had been done to reduce the number of casualties in England.

Mr. FAULKNER. They protect the railroad absolutely from outsiders, whereas there is no protection here.

Mr. FITZPATRICK. I am not speaking of trespassers.

Mr. FAULKNER. Neither am I.

Mr. FITZPATRICK. I am speaking of employees.

Mr. HAMILTON. I had employees in mind.

Mr. WILLS. These conditions do not exist there in any degree.

Mr. FITZPATRICK. The employees in England and in every other country in the world work under different conditions than the railroad employees in America.

Mr. HAMILTON. How about the clearance between the tracks? Is the management of the railroad so adjusted that danger is minimized?

Mr. FITZPATRICK. Yes; and not only the conditions surrounding the tracks and the men employed, but their work is entirely different. To illustrate that point, if you were down here in the yard where they were handling freight cars and over in England, say, London, and watched them switch freight cars there, you would come to the conclusion that 1 man in America was doing the work of about 15 men as compared with England.

Mr. SIMS. Proceed, Mr. Clark.

Mr. CLARK. The organizations, however, have another interest in reducing the number of casualties on this account, because large sums are paid every year by them to the employees and their dependents. The following list of dates and causes of deaths to locomotive engineers who are members of the Brotherhood of Locomotive Engineers, 1896 to 1913, may indicate to the committee what clearances which encroach upon the proper safety limits mean to the men who comprise these organizations. The claim for insurance was allowed by the organization to the dependents of members of the brotherhood in each of these cases, because the engineer was killed when his head struck some obstruction along the line, and the list also shows the kind of obstructions which are so dangerous to the enginemen.

And in this connection I ask the members of the committee in their consideration of this question to scrutinize carefully this list, which I will leave with the committee. This list shows accidents to the number of 85, the causes from which the accidents resulted, and all this list refers to engineers whose heads were knocked off by reason of improper clearance, and I would like to call special attention to this in connection with your consideration of the bill.

Date of admission.	Date of death.	Cause.	Date of admission.	Date of death.	Cause.
Sept. 5,1892	Nov. 21,1896	Head striking telegraph pole.	Oct. 8,1901	Aug. 3,1906	Head striking bridge.
Apr. 12,1897	Apr. 18,1898	Head striking mail crane.	Aug. 12,1906	Nov. 16,1906	Head striking some unknown object.
Feb. 14,1895	Oct. 26,1898	Do.	July 20,1904	Dec. 18,1906	Head striking water tank.
Aug. 31,1870	Oct. 24,1898	Head striking bridge.	Apr. 26,1898	Dec. 22,1906	Head striking post.
July 6,1885	May 21,1899	Do.	May 17,1890	Apr. 7,1907	Head striking mail crane.
Mar. 10,1893	May 15,1899	Head striking water pipe.	Oct. 29,1890	May 25,1907	Do.
Oct. 20,1898	Oct. 4,1899	Head striking guard rail on bridge.	June 1,1898	July 9,1907	Do.
Dec. 18,1895	Sept. 25,1900	Head striking mail crane.	Apr. 23,1903	Dec. 26,1907	Head striking bridge.
Dec. 8,1892	Jan. 17,1901	Head striking signal post.	Nov. 23,1897	Jan. 26,1908	Do.
Feb. 27,1882	Oct. 29,1900	Head striking mail crane.	Apr. 15,1903	Feb. 1,1908	Head striking mail crane.
May 2,1894	June 19,1901	Do.	Apr. 4,1904	Feb. 23, 908	Head striking bridge.
Mar. 10,1894	May 21,1901	Head striking bridges.	Apr. 6,1904	June 8,1908	Do.
Apr. 24,1885	May 4,1901	Head striking mail crane.	Jan. 20,1890	Aug. 2,1908	Head striking switch stand.
Oct. 3,1900	Nov. 30,1901	Do.	Apr. 29,1901	Aug. 22,1908	Head striking mail crane.
May 6,1892	Sept. 24,1901	Do.	Dec. 10,1904	Sept. 15,1908	Head striking bridge.
July 12,1897	Apr. 26,1902	Head striking bridge.	Jan. 18,1899	Nov. 4,1908	Do.
Jan. 19,1889	Apr. 5,1902	Head striking mail crane.	June 1,1884	Dec. 7,1908	Do.
Aug. 2,1897	Oct. 31,1902	Head striking bridge.	Apr. 2,1905	May 16,1909	Do.
July 10,1894	Feb. 10,1903	Head striking mail crane.	May 26,1907	June 28,1909	Do.
Jan. 13,1893	Jan. 15,1903	Do.	Apr. 21,1909	July 18,1909	Head striking freight house roof.
May 24,1895	Jan. 3,1903	Head striking bridge.	Apr. 2,1903	Sept. 23,1909	Head striking water crane.
May 22,1896	Feb. 22,1903	Head striking water pipe.	Aug. 10,1908	Oct. 191,909	Head striking stand pipe.
May 28,1903	July 5,1903	Head striking signal post.	Jan. 22,1908	Oct. 26,1909	Head striking switch.
Jan. 7,1901	June 28,1903	Head striking bridge.	Sept. 21,1903	Sept. 30,1909	Head striking ports in tunnel.
Mar. 12,1892	Oct. 30,1903	Do.	May 15,1905	Dec. 8,1909	Head striking bridge.
Apr. 5,1903	Jan. 6,1904	Do.	Feb. 4,1908	Dec. 6,1909	Do.
June 27,1903	Nov. 16,1903	Do.	Mar. 17,1908	Dec. 14,1910	Head striking mail crane.
Jan. 20,1892	Mar. 27,1904	Do.	Jan. 3,1891	Jan. 23,1911	Do.
Feb. 9,1890	June 12,1904	Head striking mail crane.	Dec. 13,1908	Apr. 17,1911	Head striking bridge.
Jan. 3,1894	July 1,1904	Do.	Aug. 7,1904	May 4,1911	Head striking telegraph pole.
Oct. 22,1902	Jan. 20,1905	Head striking bridge.	Feb. 17,1902	July 21,1911	Head striking mail crane.
Mar. 26,1902	Jan. 27,1905	Head striking mail crane.	July 9,1898	Aug. 19,1911	Head striking water crane.
July 17,1890	July 9,1905	Head striking switch stand.	May 12,1902	Feb. 10,1912	Head striking telegraph pole.
Oct. 14,1901	Aug. 3,1905	Head striking coping of tunnel.	Feb. 21,1890	Mar. 16,1912	Head striking mail crane.
Sept. 20,1890	Aug. 13,1905	Head striking signal post.	Sept. 22,1891	Apr. 7,1912	Head striking bridge.
Jan. 17,1904	Nov. 16,1905	Head striking bridge.	Feb. 20,1885	June 1,1912	Head striking mail crane.
Sept. 5,1898	Aug. 29,1905	Head striking mail crane.	May 4,1902	Oct. 30,1912	Do.
July 31,1904	Nov. 21,1905	Head striking signal post.	Aug. 4,1912	Feb. 7,1913	Do.
Jan. 9,1905	Apr. 20,1906	Do.	Nov. 19,1905	May 24,1913	Head striking bridge.
Feb. 29,1887	May 26,1906	Head striking pillar of bridge.	May 18,1907	May 27,1913	Do.

In a circular letter sent out by the special committee on relation of railway operation to legislation to the railways under date of December 13, 1910, referring to the La Follette clearance bill, it was said:

The enactment of legislation on this subject is being urged by the legislative representative of the employees on the ground that a number of engineers have been killed owing to the faulty construction of mail catchers and coal chutes.

Such a treatment of a subject of such vital importance to thousands of citizens of this country is unworthy and we do not believe it properly states the position of the managers of the railroads in this country.

It has also been said on frequent occasions that many of these accidents are due to the carelessness of the employees, and an attempt is made to belittle the efforts of the organizations to protect the members by law, because some of the men were not successful in dodging obstructions to which they were exposed. The various operating rules of the railroads define definitely the duties of trainmen, and I quote from the rules of several of the large railroads:

New York, New Haven & Hartford Railroad Co., page 226, rule 990, second paragraph:

They must make every effort to start their trains at the appointed time, and do all possible consistent with the rules and with safety to maintain their schedules. Any lack of cooperation on the part of engine, train, station, yard, signal, or telegraph employees must be reported to the trainmaster.

They must have frequent and close observation made of their train while they are in motion and when they stop, in order that the existence of hot boxes or other defects may be detected. The vestibule doors on passenger trains should be opened at intervals a sufficient length of time to enable this to be done, but must not be allowed to remain open unattended.

They must hold their crews and remain with and protect their trains at terminals until the cars are clear of the main track or are taken in charge by yardmen. Rear end signals must be kept in place and in service until the cars are placed on storage tracks or taken in charge by yardmen.

Rule 1208, page 272:

They must see that proper train signals are correctly displayed, and that lamp, flag, torpedo, and fuse signals are on the engine in good order and ready for immediate use.

Rule 1209, page 272:

They must keep a constant lookout, carefully observe all signals, and see whether other trains are displaying signals.

Enginemen of trains displaying signals for a following section must sound whistle signal as per rule 14 (k). When passing a freight or work train on siding (and on single track when meeting such trains) the whistle signal must be sounded when passing the caboose as well as when passing the engine. If the signal is not acknowledged by enginemen of train passed or met, the train displaying signals will stop and notify the enginemen that signals are being displayed and report circumstances to superintendent by wire.

The railroad companies demand strict obedience to the rules, and in all cases of casualty employees are held strictly accountable for the observance of a rule. The following is one of the principal rules of railroad companies:

To enter or remain in the service is an assurance of willingness to obey the rules. Obedience to the rules is essential to the safety of passengers and employees and to the protection of property.

The rules require that passenger trainmen be familiar with the duties of other men working on the train; they must examine bulletin

boards, unlock car doors, see that every car in the train is swept and dusted, aired, supplied with water, ice, take care of the lamps and see that they give good light, see to ventilation and temperature, see that the toilets are clean, see that the toilets are kept locked while the train is standing at an important station; they must reverse car seats; they must assist in making up, switching, and putting away their trains, see that all air hose and safety joints are intact; they must be familiar with the instructions for the care and management of the air brakes, signal and steam apparatus, and see that they are in good order on each car.

When the trains are ready for the reception of passengers they must take their positions at the steps, give all necessary information to passengers, see that the vestibule doors, drops, and platforms and platform gates are open and closed. They must see that signals are displayed and all necessary supplies on hand and in proper place; they must examine air, signals, and steam-heating apparatus, and see that the hand brakes are in good working order. They must be watchful against breakage of any part of the train; they must frequently pass through the cars to see if their services are required.

They must announce all stations before arrival and at the time of arrival, assist passengers on and off, must protect passengers when trains make unusual stops, and must see that all passengers are seated; must take care of gas and electric lights.

With this multitude of duties to perform, and knowing that constant vigilance is necessary for the proper protection of the trains, it it not at all surprising to find that frequently a trainman goes out upon the platform and puts his head out a few inches from the car, and, as a consequence, he pays the penalty with his life.

See Atchison, Topeka and Santa Fe book of rules, page 62, rule 311

Notice is hereby given that at some points on this line there are platforms, sheds, roofs, water-tank frames, telegraph poles, bridges, scales, mail cranes, cars, and other side obstructions, and trolley wires of street railways which may be dangerous, and employees must inform themselves as to location of such obstructions and use due care to avoid injury thereby.

A list of overhead structures that are considered especially dangerous will be printed in the time-table.

The time-table of the Santa Fe, western lines, contains this notice:

All employees are hereby notified that there are coal sheds, platforms, and other structures located on the main line and on the sidings; also structures and platforms belonging to private corporations and persons located on industrial sidings and spurs that will not clear. A man riding on the side of a car and all employees must protect themselves from injury in passing such structures.

Mr. HAMILTON. Now, I infer that articles of that kind do not appear ordinarily along the lines of a first-class road, and the reason why you mentioned these particular roads is because they are exceptions in that respect; is that true?

Mr. CLARK. These obstructions appear along the road, and the idea is, of course, to call the attention of the employees to them.

Mr. HAMILTON. I understand that. What I want to get at is this, whether obstructions of that kind are common along the lines of all the roads, or whether these two roads are exceptions.

Mr. CLARK. They are common, but these roads take it upon themselves to call the attention of the employees to them.

Mr. HAMILTON. That is exactly what I wanted to get at.

Mr. WILLS. The other roads do not even do that; some of them.

Mr. O'SHAUNESSY. How does that help the enployees?

Mr. WILLS. How does it help the employee?

Mr. O'SHAUNESSY. Yes; he sees them himself, and they are notorious.

Mr. WILLS. Yes; but if you were in the railroad service and you were passing back and forth over your division or over your territory, and these obstructions, while they might be shown in the time card and your attention might be called to them by bulletin or otherwise, there would be times when you would not be absolutely familiar with a recent bulletin which had been put up notifying you of some special object which did not clear, and there is a danger in it, and these roads have been a little more decent, perhaps, than others in calling the attention of the employees to that fact in order that they might protect themselves.

Mr. FITZPATRICK. If you will just permit me, if you are on a train running at a rate of better than a mile a minute and you were passing a semaphore which meant the life or death of the people on your train, do you not think you would look up at that semaphore regardless of any obstruction that might be ahead of you? Do you not think that for an instant you might forget such an obstruction; I think you might.

Mr. O'SHAUNESSY. Do you mean to say my memory would be refreshed by the notice which had been given?

Mr. FITZPATRICK. I do not think so. I think in the darkness of night and in the swift traveling of the train, you would be trying to perform your duty and save the people intrusted to your care.

Mr. O'SHAUNESSY. Then you agree with me that it does not amount to much?

Mr. FITZPATRICK. I agree with you that it does not amount to much.

Mr. O'SHAUNESSY. I mean the notice does not amount to much?

Mr. FITZPATRICK. No; the notice does not amount to anything.

Mr. O'SHAUNESSY. That is what I am saying.

Mr. FITZPATRICK. Yes.

Mr. O'SHAUNESSY. It struck me as a mighty poor remedy.

Mr. FITZPATRICK. That is right.

Mr. O'SHAUNESSY. They are simply telling the men that there are 100 ways in which he can be killed. I wanted to find out how effective the notice was.

Mr. CLARK. Chicago & North Western Book of Rules, page 166, rule 939:

> They must watch their trains very carefully to discover anything wrong in the matter of journals, brakes, or other defects liable to be dangerous; heep a sharp lookout for all signals from the train and from stations. The rear trainman must ride on the rear platform of the rear car until his train has passed beyond the outer switches to observe any signals which may be given.

Also page 175, rule 1044:

> Keep a vigilant lookout at all times, particularly when passing around curves, through stations and yards, and must frequently look back to see that no portion of the train has become detached or derailed; also for any signals that may be given by trainmen or others. They must not be so occupied as to prevent themselves or firemen from keeping a constant lookout on entire trip.

Another evidence of bad clearance conditions is seen in such letters as this received from one of our members:

Please find inclosed this statement that the Chicago & North Western Railroad in Clinton, Iowa, are requiring their men to sign, and please give us your opinion on this matter.

THE STATEMENT.

Are you aware that on the road at station sidings, in yards, and on switch tracks there are buildings, structures, and obstructions which will not clear a man on top or on the side of the car?

Will you inform yourself with regard to this condition in the district in which you may be employed and exercise care to avoid injury to yourself or your fellow employees?

When a company knowingly maintains a menace to the public safety, it should not be permitted to shift the burden of responsibility therefor to an employee who is killed on account of the gross negligence of the employer.

At a recent conference before the chief inspector of locomotive boilers, a striking illustration of the clearance on certain roads was had. The chief inspector, under the authorization of the law passed at the last session of Congress, had prepared a rule for the protection of enginemen to require a very narrow running step and handhold along the side of the locomotive cab which would permit the engineer and firemen to escape to the front end of the locomotive in case anything went wrong within the cab. The proposition was to provide a stirrup step 3 inches above the running board and the handhold projecting an equal distance. An objection was made by the representatives of the carriers at the conference, and among other reasons assigned was that clearance conditions on certain roads would not permit the use of a handhold which projected 3 inches on each side.

The representative of the Pennsylvania Co. lines, East, stated:

We couldn't get it on our engines. I am quite sure our clearance would not permit it without the reconstruction of the entire cab.

Mr. DEWALT. Clearance between what—clearance between the engine and something along the track, or clearance between that train and some other train?

Mr. CLARK. Clearance between the train and some stationary object.

Mr. PARKER of New Jersey. How about the roundhouse doors—are they too narrow?

Mr. CLARK. I do not presume it applies especially to roundhouses. I might say, digressing just a moment, that there are conditions on certain railroads where the clearances on either side, because of the oscillations of the train, are not more than 3 inches.

Mr. ESCH. Is that the cause of what is called sidewiping, as, for instance, when one train is passing another on a sharp curve?

Mr. CLARK. No, sir.

Mr. ESCH. There have been cases where cars have been practically turned over from coming in contact with cars on another train while going around sharp curves.

Mr. MONTAGUE. You are speaking of stationary objects?

Mr. CLARK. Yes, sir. What is called sidewiping, might occur when a car is run out on a sidetrack and is left too near the main line.

The CHAIRMAN. That is, where the car is not carried far enough to clear the main line?

Mr. CLARK. Yes, sir.

Mr. Crawford, of the Pennsylvania Lines west, stated:

> We allow 3 inches normal clearance. Some of our cabs can not use the total clearance because they are within that 3 inches * * *. Both Mr. Wallis and myself feel that on the Pennsylvania we would have extreme difficulty in putting it on without making important changes in the cab.

Officials from other roads made similar statements, and in view of their contentions that clearance conditions would not permit the application of this safety device the suggested rule was abandoned.

The Railway Age Gazette of February 4, 1916, contains an editorial in reference to the pending bill. It was evidently written with considerable care and may be assumed to express the sentiment of the railroad companies with reference to this legislation. After mentioning the provisions of the laws of the States and the fact that legislation had formerly been presented to Congress, the article makes the following statement with reference to the bill introduced by Senator Thompson:

> The measure which is introduced in Congress has many points of superiority over previous bills of this character. It recognizes the fact that clearance is a relation between the dimension of equipment and structures, and specifies the distance which must be provided between the two without fixing definitely the dimensions of either, and thereby arbitrarily arresting future developments.

Another pertinent statement in the editorial is as follows:

> The increased attention given by the railroad brotherhoods and legislative officers should impress the railway managers with the necessity of giving the problem concerted study. At the present time the roads have no standard clearance program for other than third rail and overhead wire construction. Neither have they any standard dimensions for equipment. As a result there is no harmony in the dimensions either of construction or equipment.
>
> It is very important that the railways should begin at once to harmonize dimensions of equipment and construction and to adopt rules and penalize roads which have exceeded the standards adopted.

The bill before the committee was drafted with a view of securing to the employees a safe clearance, and from our practical experience in riding on trains we felt that a minimum distance of 3 feet on each side should be prescribed and a minimum of 6 feet overhead.

Mr. MONTAGUE. That would apply to tunnels, too?

Mr. CLARK. No, sir; tunnels, as to overhead clearance, are excepted in the bill. This applies only to future obstructions. Our purpose was to make the bill mandatory as to new structures and authorize the Interstate Commerce Commission to allow extensions of time when good cause was shown as to old structures.

The CHAIRMAN. You mean existing structures?

Mr. CLARK. Yes, sir.

Mr. O'SHAUNESSY. When you say, good cause was shown, do you mean as to the necessity of the structures being there?

Mr. CLARK. I mean that that would be something entirely within the province of the Interstate Commerce Commission to pass upon. If the railroad companies show good and sufficient cause why they should not be removed, that would be a question for the commission.

Mr. HAMILTON. Are tunnels ordinarily constructed so as to provide sufficient clearance from the tops of cars and along the sides?

Mr. CLARK. In the early days they were, but in later years the railroads have been increasing their cars and locomotives, making them both wider and higher, until they almost fill the tunnels, and there is no room on either side for a human being to pass. The bill requires the free space on the sides.

Mr. HAMILTON. As I gather from your statement, the tunnels are too narrow and too low?

Mr. CLARK. As a rule; yes, sir.

Mr. DOREMUS. Section 3 of this bill (H. R. 9047) provides that there shall be not less than 36 inches of free space or clearance on each side. Now, that applies to tunnels, as well as to everything else.

Mr. CLARK. That does apply to tunnels.

Mr. DOREMUS. I think it does. It says that there shall be 36 inches on each side.

Mr. WILLS. That is fully explained in the bill.

Mr. DOREMUS. It also provides that there shall be 6 feet of overhead clearance, except as to tunnels.

Mr. CLARK. Yes, sir.

Mr. DOREMUS. This bill makes no provision for any overhead clearance at all in tunnels.

Mr. O'SHAUNESSY. What element entered into that estimated cost of $440,000,000 to comply with that bill that was referred to?

Mr. FITZPATRICK. I do not know, because I was not here, but I presume it covered everything mentioned in the La Follette bill.

Mr. O'SHAUNESSY. I want to find out just what elements entered into it.

Mr. FITZPATRICK. I should say everything.

Mr. WILLS. Tunnels and bridges existing at that time.

(Mr. Clark submitted for the record the following statement of casualties by the State Public Utilities Commission of Illinois:)

Statement of casualties resulting from side and overhead obstructions for year ending June 30, 1915.

[State Public Utilities Commission of Illinois.]

Steam railroads.	Overhead obstructions.								Side obstructions.													
	Overhead bridge.		Viaduct.		Wire across track.		Movable.		Viaduct or bridge.		Car on adjoining track.		Mail or water crane or post.		Stock pen or gate.		Buildings, etc.		Switch stand, etc.		Movable.	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Atchison, Topeka & Santa Fe Ry. Co.		1						1						1								
Baltimore & Ohio R. R. Co.	1									1				1		1						1
Baltimore & Ohio Chicago Terminal R. R. Co.												1						1				1
Belt Ry. Co. of Chicago																						2
Chicago & Alton R. R. Co.				1		1						1				1				1		2
Chicago & Eastern Illinois R. R. Co.												5								2		
Chicago & Erie R. R. Co.				1																		
Chicago & North Western Ry. Co.				1					1									1		1		5
Chicago & Western Indiana R. R. Co.										5												
Chicago, Burlington & Quincy R. R.	1	1								3		6				1				3		4
Chicago Great Western R. R. Co.												1		1								
Chicago Junction Ry. Co.		2		1								1				1		1		1		4
Chicago, Milwaukee & St. Paul Ry. Co.			1					1		4		3						1		1		1
Chicago River & Indiana R R Co.																						1
Chicago, Rock Island & Pacific Ry.	1					1			1	3		2		1						3		
Chicago, West Pullman & Southern R. R. Co.																		1				
Cincinnati, Hamilton & Dayton Ry.																				1		
Davenport, Rock Island & North-western Ry. Co.																						1
Elgin, Joliet & Eastern Ry. Co.		2										1										
Illinois Central R. R. Co.	1	1		1					1	2		3		2						4		3
Indiana Harbor Belt R. R. Co.								1									1			2		1
Minneapolis & St. Louis R. R. Co.																				2		
Mobile & Ohio R. R. Co.														1								
New York Central R. R. Co.	1																					
New York Central Lines (Cleveland, Cincinnati, Chicago & St. Louis Ry.)												1				2				2		1

New York Central Lines (Michigan Central R. R.)												2										1
New York Central Lines (Lake Shore & Michigan Southern Ry.)										1												
New York, Chicago & St. Louis R. R. Co.																				2		
Pennsylvania Lines (Pittsburgh, Cincinnati, Chicago & St. Louis Ry.)										1										1		
Pennsylvania Lines (Pittsburgh, Fort Wayne & Chicago Ry. Co.)				1														1				
Pennsylvania Lines (Vandalia R. R. Co.)																						1
Peoria & Pekin Union Ry. Co.																		1				
Pere Marquette R. R. Co.																				1		1
Southern Ry. Co.																				1		
Terminal Railroad Association of St. Louis												1										
Toledo, St. Louis & Western R. R. Co.												1										2
Wabash R. R. Co.										1		2		1			1		1	2		3
Total	5	7	1	6		2		3	3	24	1	31		8		6	2	7	1	30		35
Illinois Traction Co.						1												1				
(The) North Kankakee Electric Light & Ry. Co.																						1
Peoria Ry. & Terminal Co.												1										2
Total						1						1						1				3
Chicago Surface Lines													2									
Quincy Ry. Co.												2										
Total												2	2									
Grand total	5	7	1	6		3		3	3	24	1	34	2	8		6	2	8	1	30		38

The CHAIRMAN. The hearings upon these bills will be resumed on Thursday of next week at 10 o'clock.

(Thereupon, at 12 o'clock noon the committee adjourned.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Washington, D. C., Thursday, April 27, 1916.

The committee met at 10 o'clock a. m., Hon. W. C. Adamson (chairman), presiding.

The CHAIRMAN. Senator Faulkner, the committee has served notice on you to appear in regard to these bills, and the committee is now ready to hear from you.

Mr. FAULKNER. Mr. Chairman, we would ask with the hope of getting through with the clearance bill and the hours-of-service bill to-day, that they be taken up for consideration, and to-morrow the Sims bill, as we could thus have all the witnesses ready for that bill.

We should like to take up the clearance bill first, for the reason that the Committee on Interstate Commerce of the Senate, in order to allow these engineers to get away, have very kindly agreed to meet and hear us at 2 o'clock.

The CHAIRMAN. You wish to be heard on the clearance bill to-day and on the Sims bill to-morrow?

Mr. FAULKNER. Yes, sir; we will submit our argument on the clearance bill first.

The CHAIRMAN. You may proceed.

Mr. FAULKNER. I wish to say that these witnesses have not long statements, their formal statements are short, and if they are allowed to complete their statement in chief without interruption, as they are not in the habit of appearing before committees of Congress, it would be very gratifying to them and I know it would be to the interest of the committee in facilitating the hearing.

The CHAIRMAN. I hope the members of the committee will reserve their cross-examination questions then until the witnesses have concluded. Who will you have first?

Mr. FAULKNER. Mr. Morse will take the stand first.

STATEMENT OF MR. C. A. MORSE, CHIEF ENGINEER CHICAGO, ROCK ISLAND & PACIFIC RAILROAD, 803 LA SALLE STREET STATION, CHICAGO, ILL.

Mr. MORSE. House bill 9047 provides—

First. A 36-inch clearance between engines and cars and structures on either side.

Second. A 6-foot clearance between engines and cars and any overhead obstruction.

Third. That railroads that have not provided this clearance at the end of six months after the passage of this bill shall file a list of structures that do not give this clearance with the Interstate Commerce Commission.

First. What will be the result of the passage of this bill? The railroads must either arrange to remove the obstructions from within

the limits named in the bill, or, second, stop operating cars and engines that are too large to pass present structures and leave the required clearance, or stop operating trains.

Referring to these alternatives in their order, I shall first take up the subject of remodeling structures.

It was estimated in 1911, when the La Follette bill was under consideration, that the cost to the railroads alone to remove obstructions so as to give a clear space of 6 feet 11 inches from the center of the track to the edge of any obstruction, this being the requirement of that bill, and to make changes in overhead clearances to give 20 feet clear headroom above the top of rail, which also was a requirement of that bill, would be $716,000,000. This was arrived at by taking estimates prepared and furnished by railroads comprising 152,648 miles, amounting to $450,000,000 and prorating this over that mileage and then figuring the same expense per mile for the remaining 90,000 miles of railroad in the United States from which estimates had not been received.

A car or engine that would pass the obstructions that were permitted under the bill for which the above estimates were made and give the side clearance of 36 inches called for by the present bill could be but 7 feet 10 inches in width, and there are no standard-gage cars or engines in the United States but what are wider than that.

The latest purchased cars and engines have a width of from 10 feet 2 inches to 10 feet 9 inches, and to furnish the clearance called for by the present bill with these engines and cars requires that obstructions be removed for a width of 1 foot 5½ inches on each side—wider than was called for by the La Follette bill for which the above estimates were made—and this additional widening, together with additional head room called for in this bill, which is from 21 to 22 feet above top of rail, as compared with 20 feet called for by the La Follette bill, will amount to twice as much as was required to conform to that bill and should cause twice as much additional cost, or $1,432,000,000, in addition to the $716,000,000 estimated at that time, or a total of $2,148,000,000, and it is by no means sure that this sum will do it, as there were thousands of structures that had a 7-foot side clearance at that time and were not affected by the former bill, but which are all affected by this bill. There were many bridge piers that were wide enough on top to take care of a structure with 6 feet 11 inches or 7 feet side clearance that are not wide enough to take a structure with 8 feet 6 inches side clearance, which is about what this bill would require.

In addition to the expense to the railroads to carry out the provisions of this bill, there will be a tremendous expense to other business interests who own buildings on their own land which cars and engines can not pass and give the required clearance.

From some records recently compiled, but which are not at all complete, it has been found that there are 26,413 structures belonging to private parties, as compared with 17,286 owned by railways in the same territory; and on the New York Central alone there are 2,400 privately owned structures compared with 1,800 owned by the railroad that would be affected by this bill.

As stated before, there are no cars or engines now in use by standard-gauge railroads in the United States that would give the required clearance.

There were, by the Interstate Commerce Commission report, at end of 1914, 64,760 locomotives, 53,466 passenger cars, and 2,450,356 freight cars owned by the railroads, or operated by them, in the United States. Estimating the locomotives as averaging $20,000 each, the passenger cars at $8,000 each, and the freight cars at $500 each (and you can not replace them for twice this amount), the present value of the equipment that can not under the terms of this bill be lawfully used until the structures are remodeled, would be $2,948,106,000, or more than the estimated cost of giving the wider clearance. So that apparently the only thing the railroads can do if this bill becomes a law is to attempt to enlarge the clearance or quit operation; and as they can not do the latter it simply means that the railroads would be obliged to spend over $2,000,000,000 and private property owners probably a half a billion more.

But a great many of the obstructions are masonry, concrete, or steel structures, good for 50 to 100 years life; many are grade separation structures, that can not be changed and continue the separation; many are in connection with track elevation work in large cities, where the work was performed under city ordinances. To carry out the provisions of this act, it becomes unlawful to operate trains on any double track line having less than 13 feet 9 inches between centers of tracks, or in any terminal with less than that distance between tracks—and they are all less than that. To carry out the provisions of this act, means that not only will many present grade separations be done away with, but it will prevent many others being made, and which can not be made if 21 or 22 feet overhead clearance is required. The lives of thousands of the traveling public are made safer by separation of grades, and not only the traveling public, but the employees on the trains that cross at these points.

When viewed from all points, this bill seems to be impracticable, expensive, and inclined to do exactly the opposite thing from that which is intended. Instead of conserving human life, it will, if passed, prevent the great improvements in separation of grades that do conserve life. The railroads in the past few years have made great efforts to prevent injury or loss of life by safety first teachings and practices, and the statistics seem to indicate that great progress has been made along these lines in regard to deaths of trainmen from obstructions alongside or overhead.

Notwithstanding the great increase in freight and passengers handled, and necessary increase in trainmen required, the deaths from obstructions have decreased, and this decrease is due in part to the perfection of the air brake, which does away with the necessity for trainmen to be on top of cars to operate the brakes, which was the case in the days of hand brakes.

The increase in business has been as follows: 1903, 173,000,000,000 ton-miles freight, 21,000,000,000 passenger-train miles; 1914, 288,000,000,000 ton-miles freight, 35,000,000,000 passenger-train miles. While the number of trainmen employed has increased from 253,000 to 312,000, between 1904 and 1908, the yearly average of deaths of trainmen from being struck by obstructions was 110; while between 1908 and 1913 it averaged but 76, while in 1915, the last year for which we have record, it was only 45.

This very marked decrease has been made, notwithstanding the fact that there has been an increase of 59,000 trainmen in service,

and notwithstanding the fact that the greater portion of the large equipment which has reduced the clear space between equipment and obstructions, has been purchased during this time.

The CHAIRMAN. Would it relieve the situation any or improve the bill or remove your objection if the power was vested in the Interstate Commerce Commission by a provision of this bill, to govern and regulate the speed and time within which these changes should be made?

Mr. MORSE. I do not think so.

Mr. ESCH. Did I understand you to say that the width of cars now runs from 10 feet to 10 feet 9 inches?

Mr. MORSE. Of the newer equipment; yes, sir.

Mr. ESCH. On the older equipment is it less in width?

Mr. MORSE. Yes; the older equipment used to run 8 feet to 9 feet. It has gradually been increasing from 8 feet 6 inches up to the present sizes.

Mr. ESCH. Does that measurement, 10 feet 2 inches, and 10 feet 9 inches, include the ladders and hand rails?

Mr. MORSE. Yes, sir; over all.

Mr. ESCH. That is over all?

Mr. MORSE. Yes.

Mr. ESCH. Is there any limitation made by the Master Car Builders' Association or any other kindred association or organization of the railroads, as to auto and furniture cars?

Mr. MORSE. I can not say about that; I do not know that.

Mr. ESCH. You understand, of course, they are much larger than the average car?

Mr. MORSE. Yes, sir.

Mr. ESCH. Are they larger in width or only in height?

Mr. MORSE. I think both. The Union Pacific, in one of their late purchases, specified automobile cars to be 10 feet 8¾ inches over all in width.

Mr. R. W. PARKER. How high?

Mr. MORSE. I do not know; I have not the figures, but probably in the neighborhood of 14 feet.

Mr. R. W. PARKER. How far above the track does the highest car go, 19 feet?

Mr. MORSE. No; probably some special heights will probably run 15 feet or 15 feet 6 inches, but, as a rule, they run somewhere between 14 feet and 14 feet 6 inches from the top of the rail to the running board.

Mr. R. W. PARKER. What is the lowest height?

Mr. MORSE. I could not say.

Mr. R. W. PARKER. Are they generally about 18 or 19 feet?

Mr. MORSE. They run from 16 feet 2 inches, to my knowledge, on up. In Chicago and Kansas City, with which I am familiar, they run along 17 feet to 18 feet.

Mr. R. W. PARKER. Would it be possible to put a small passageway down in the top of your cars?

Mr. MORSE. No, sir; I do not think it would be possible.

The CHAIRMAN. Did I correctly understand you as saying that obstructions on the sides of the track in the shape of a structure put

up by private owners and private capital would incur more expense than the other changes?

Mr. MORSE. No, sir; in my statement I made it possibly in the neighborhood of one-fourth as much.

The CHAIRMAN. That could be certainly mitigated by the discretion of the commission through an amendment, could it not, requiring private owners of properties not in the control of the carriers, that the commission could control those?

Mr. MORSE. I suppose so.

The CHAIRMAN. There may be other things an amendment might enable the commission to deal with, lessening the requirement on the company, or postponing them for a longer period of time.

Mr. MORSE. I presume it could be done.

Mr. ESCH. How do these new locomotives, called the Malley——

Mr. MORSE. Yes, sir; that is one type.

Mr. ESCH. How do they compare with the average type as to width and height?

Mr. MORSE. They will be the maximum.

Mr. ESCH. Which would be what?

Mr. MORSE. In the neighborhood of 10 feet 9 inches over all.

Mr. ESCH. But the height would not be any different?

Mr. FAULKNER. Do you mean the height or the width?

Mr. MORSE. There would be a variation of possibly 1 foot or 1 foot and a half; that would be in the height of the stack and the sand dome, and such things as that.

Mr. ESCH. But they are really about the biggest vehicle that crosses or passes over the rails, are they not?

Mr. MORSE. I do not think they are necessarily so, as to width, when they stand on a straight track. They take up more space when they are going around curves, and things like that, on account of the longer boiler.

Mr. ESCH. In going around a curve at a rapid speed, of course the centrifugal power would throw the car or engine out of alignment, would it not?

Mr. MORSE. Yes, sir; but they have an overhanging front, a good deal like the overhang on a street car, that gets over beyond any ordinary width.

Mr. ESCH. Do you know anything about these new electric motors the Milwaukee has put on?

Mr. MORSE. No, sir.

Mr. ESCH. As to whether or not they reach maximum of width and height?

Mr. MORSE. No, sir; I could not say.

Mr. ESCH. Possibly there may be some gentleman from the Milwaukee road here who can give us that information.

The CHAIRMAN. There would be no possible difficulty about making all these provisions in the new construction of railroads and cars, would there?

Mr. MORSE. I think it is possible on new construction; yes, sir.

The CHAIRMAN. The great difficulty being the changes of the existing construction?

Mr. MORSE. Yes, sir.

Mr. ESCH. Has the great and increasing value of terminals had a tendency to influence the size of locomotives and cars in order to save yardage and siding?

Mr. MORSE. I never have heard that excuse made for increasing the size of cars. No, sir; I do not think so. I have never heard it considered.

The CHAIRMAN. There is a disposition from various motives to carry all they can at each time they run, is there not?

Mr. MORSE. Yes, sir.

Mr. CULLOP. But the engine used in the yard is a different engine from the one they use on the line track, is it not?

Mr. MORSE. Yes, sir.

Mr. CULLOP. In other words, you use a smaller engine in the yards, as a rule?

Mr. MORSE. As a rule, yes, sir.

Mr. CULLOP. Than the one that is used out on the main line?

Mr. MORSE. Yes; as a general rule that would be so.

Mr. ESCH. Yet all main-line locomotives have got to go in the yards?

Mr. CULLOP. Not in the yard work as a rule.

Mr. ESCH. The switching, of course, is done by the smaller engines.

Mr. CULLOP. As a rule, when you come to the yards, the line engine is cut loose from the train and another engine takes the train and places the cars; is that not true?

Mr. MORSE. No, sir; when you come to a yard the line engine, as you call it, takes the train into the yard, places the train on one of the several tracks in the yard, then it is cut off; then the switch engine takes up the train and breaks it up. But your road engines have to go into practically all the tracks in the yards, because there may be a dozen or fifteen or twenty-five trains coming in there, and there has to be a separate track for each one.

Mr. CULLOP. The same is true in making up a train to take out, is it not—the switch engine makes up the train, does it not?

Mr. MORSE. Yes, sir.

Mr. ESCH. In large cities where you have been ordered to depress or elevate your tracks the municipality has had to put in its own structures to clear your tracks. Supposing this bill, requiring a higher clearance, were passed, would that entail a charge on the municipality in elevating its overhead spaces?

Mr. MORSE. There are very few cases in the West where the municipality has participated in the cost of the structures.

Mr. ESCH. Its own structures crossing your tracks overhead?

Mr. MORSE. I do not know of any.

Mr. STEPHENS. Viaducts over the yards?

Mr. MORSE. They were city structures, but the railroad pays for them.

Mr. ESCH. Entirely, as a rule?

Mr. MORSE. Well, in the West almost entirely. My understanding is that in the East it is different; sometimes it is prorated between county, State, and municipality, but in the West the railroads as a rule have had to pay it all.

Mr. RAYBURN. You mean, have to pay it all where it is a bridge passing over the railroad track?

Mr. MORSE. To carry a street over the railroad track?

Mr. RAYBURN. Yes.

Mr. MORSE. Yes, sir.

Mr. RAYBURN. It is so in my State, Texas.

Mr. STERLING. In Illinois does not the law give the commissioners there the right to apportion the cost?

Mr. MORSE. I think likely it does. In Missouri the commission is inclined to do that lately, and I think that in Wisconsin they have also done that; there is an inclination that way at the present time, but most of them have been paid for entirely by the railroads.

The CHAIRMAN. Who will you have for your next witness?

Mr. FAULKNER. Mr. Baldwin.

The CHAIRMAN. You may proceed.

Mr. FAULKNER. Mr. Baldwin, please give your name, residence, and official occupation.

STATEMENT OF MR. A. S. BALDWIN, CHIEF ENGINEER, ILLINOIS CENTRAL RAILROAD, CENTRAL STATION, CHICAGO, ILL.

Mr. BALDWIN. Mr. Chairman and gentlemen, I think Mr. Morse has shown conclusively that it is impracticable to reduce the size of the locomotives and equipment so as to conform to this proposed bill, and, consequently, I shall not endeavor to discuss that feature of it to any considerable extent. Such a change would mean a revolution in railroad operation to-day.

The American railroads to-day are furnishing the cheapest transportation that is furnished in the world. The cost of it has been steadily decreasing to the public. That has largely been brought about by the increase in size and capacity of locomotives and cars. If those were reduced in size the business would be revolutionized; the cost would be enormously increased, and it stands to reason that the public would not stand for it. I think we can safely dismiss that idea as impracticable. It is, of course, impracticable to stop the operation of the railroads, and consequently the only alternative left would be an increase in the clearance dimensions.

The expense of that and the cost of it we can only approximate, as has been shown by Mr. Morse from estimates that were made in connection with the previous bills, the La Follette bill and the Martin bill. Estimates that were compiled by actual statistics and furnished by the railroads of the costs of meeting that condition amounted, as stated by Mr. Morse, to $716,000,000. That would be simply an impossible expenditure in itself, and yet this bill, if it were passed, would mean that that amount would be probably doubled and trebled.

The former bills, to illustrate, provided for width of locomotive and cars of 10 feet 6 inches; they provided for height of cars 14 feet 2 inches; they provided for an overhead clearance of 20 feet, and they provided for lateral clearance from center of track in tunnels, rock cuts, etc., of 6 feet 11 inches. Now, taking the width of 10 feet 6 inches for cars, or taking the one-half of that and deducting it from this lateral clearance, 6 feet 11 inches, that is permitted under those bills, would give you a requirement of only 1 foot 8 inches clearance between the structures and the cars, whereas this bill would require 3 feet. And, as stated by Mr. Morse, that would not simply double

the expense, because the expense increases enormously in proportion to the added width to be cared for. And we may presume that this $716,000,000 would probably be more than doubled, more nearly trebled.

Another important feature, and which I shall have to disagree with my predecessor, Mr. Morse, in regard to, is as follows: There was power given to the Interstate Commerce Commission in the former bill to exempt such structures as it might seem to be impracticable to change. Such, for instance, as tunnels, retaining walls, embankments, permanent overhead structures, etc., if the removal were impracticable, but even if that exemption were passed it would mean that the Interstate Commerce Commission would be loaded down with an enormous amount of detail, which it would simply be impossible for it to give actual attention to, and the result would be that the real aim and end of the bill would be nullified, because it would apply only to such clearances as the railroads are to-day taking the very best possible care of and daily improving the conditions that exist.

The CHAIRMAN. Do you not think the work of the commission would be greatly minimized by bunching everything of a particular class and having them consider that class as one?

Mr. BALDWIN. Well, Mr. Chairman, I think it would minimize it; yes; but when you begin to bunch these things you can bunch so much that, after all, what does the bill amount to? If you bunch everything, you will include things that are impracticable of enlargement, and you will have included the things that the railroad companies have found impossible to enlarge.

The CHAIRMAN. That is what I mean. If they find it impracticable to do, for instance, as to a certain number of tunnels or a certain number of other structures, could not they all be combined in one class and let the commission consider them all at once in its class?

Mr. BALDWIN. Then the commission would lose the possibility of improving the conditions in the individual cases where it might improve them. There might be cases where tunnels could be widened advantageously.

The CHAIRMAN. You have just alluded to the efforts of carriers to protect against accidents. I was going to ask you when you finished to state some place in your remarks what particular precaution and devices the carriers do usually resort to in order to give warning to all persons in approaching those exposed places.

Mr. WALDWIN. The generally accepted maximum standard for the overhead clearance is 22 feet now above the top of the rail. That will clear a man of any height standing on the top of the highest known car. Of course, as I have previously stated, it is impossible or impracticable, at least, in all cases to conform to that. Now, where structures are not sufficiently high to conform to that they have an arrangement that they call the "telltale" bridge, or tunnel warning, which consists of straps hanging from a vertical post or wire, such a distance down that they will strike a man standing on top of a car some distance before he comes to such a structure as that. They, of course, are so arranged that they do not injure the man, but simply give him a smart little slap in the face and remind him at once of the approaching structure.

Mr. CULLOP. How far away are the telltales usually placed from the opening of the structure, the entrance to the structure?

Mr. BALDWIN. From 1,000 to 1,500 feet. It is an ample distance to give warning.

Mr. CULLOP. But supposing a man would come on the top of the car between the telltale and the opening of the structure?

Mr. BALDWIN. That is a very remote possibility.

Mr. CULLOP. Yes; but supposing he would, is there anything to warn him?

Mr. BALDWIN. He would not get the warning, except that coming out at that time a man would inevitably look around and survey the situation and see where he was.

Mr. CULLOP. Suppose it was in the dark when he could not see or tell?

Mr. BALDWIN. The trainmen very soon become so familiar with their run that they always know practically where they are, and within a very short radius of distance, too. I have never heard, in my railroad experience of 30 years, of a case in which a man was struck by coming out on top of his car between the time that he had passed the telltale and the time he reached the obstructions.

Mr. SIMS. Is it not a fact that if this bill were passed and the roads complied with it in all instances there would be a great reduction in the loss of life?

Mr. BALDWIN. No; I think that instead of there being a reduction in the loss of life, I think there would be a great increase in the loss of life.

Mr. SIMS. Do you think the greater the opportunity to escape danger the more we are liable to get into danger?

Mr. BALDWIN. No; I think in trying to eliminate danger from overhead and side clearances you would run into other dangers that would far exceed those you are trying to avoid.

Mr. SIMS. You are an engineer, I believe?

Mr. BALDWIN. Yes, sir.

Mr. SIMS. Is it physically possible to increase the size of these tunnels in order to make them reasonably safe? I mean regardless of the expense.

Mr. BALDWIN. When you say "physically possible," why——

Mr. SIMS. Yes; let us say "engineeringly possible."

Mr. BALDWIN. That does not appeal to an engineer. Anything is physically possible. It might be physically possible to stop the Mississippi River for a while, but the question that comes up, is it really practicable or can it be done to advantage?

Mr. SIMS. If it can be done as an engineering proposition that removes that question, does it not?

Mr. BALDWIN. It can not be done as an engineering proposition.

The CHAIRMAN. What are some of the other dangers that you say they would probably run into?

Mr. BALDWIN. I was going to dwell on those as I went along a little further, if you are willing.

Mr. SIMS. Then on the railroads in the United States do you say the dangers can not be reduced?

Mr. BALDWIN. I did not say so by any means. I think they can be reduced, and are certainly being reduced.

Mr. SIMS. I mean, only through the actions of the employees?

Mr. BALDWIN. No, sir; they can be reduced in very many ways very largely, more largely than through action of the employees.

Mr. SIMS. I understood you to say it was physically impossible to remove all these dangers?

Mr. BALDWIN. I say yes, from an engineering standpoint, it is impossible to remove all this danger, to remove all of these obstructions.

Mr. SIMS. Then it is impossible, is it not, if it is physically impossible, it is a physical matter?

Mr. BALDWIN. I said from an engineering standpoint.

Mr. SIMS. I do not know what that is.

Mr. BALDWIN. You might tell me, for instance, that you could build a mountain out on a plain. I would not say that was physically impossible, but when you come to raise the money to build a mountain on the plain and the people investing wanted dividends on the money expended you would find that from an engineering standpoint it was impossible.

Mr. SIMS. Well, then, it is financially impossible?

Mr. BALDWIN. It is financially impossible; yes, sir.

Mr. SIMS. Then, I suppose we have got to be confronted for the next 10,000 years, if we should live that long, with killing people simply because it costs us money to provide the preventions, is that it?

Mr. BALDWIN. No; I do not think that. I think that the best devices of man, that is when we are using a structure or a machine that is in the very most advanced type, so far as the art of man is concerned, that the necessity of the public for the use of that machine is going to make it used regardless of the fact that there may be some very few people that are injured or may be killed through its use.

Mr. SIMS. I am not controverting that it might be financially impossible for the roads immediately to raise the money. It is only a question about whether they are going to have public utility service performed the rest of all time with reference to how much money it takes or how much money it does not take to perfect it in the matter of safety.

Mr. BALDWIN. To try to put it in a practical case, I would say this, that the railroad companies, and I am now limiting it to the railroad companies because that is what is under discussion now, are steadily improving their plants. They are steadily improving them in such a way that they are improving the uses for which they are designed and decreasing the cost. At the same time that they are doing that they are steadily reducing the loss of life. In other words, it is working, it is operating.

The CHAIRMAN. Even if it does cost more is it not the one case, the prime case, in which the allowance of an increased rate would be justified for the safeguarding of human life and limb?

Mr. BALDWIN. I would say that the increase in rates would be so enormous in a case like this, in proportion to the existing loss of life, that it would be impracticable to put up on the public rates that would meet a condition that would always exist under these circumstances.

The CHAIRMAN. You know the Scriptures say that all that a man hath will he give for his life, and if a man values his life so highly, all should value each others' lives and not put mere money in the balance against the protection of human life and limb.

Mr. BALDWIN. If that were carried to an absolute conclusion, what would we do when it came to going to war? We recognize the fact that war exists.

The CHAIRMAN. That is a different proposition. Men go to war when they are crazy, but they travel on business.

Mr. BALDWIN. If you are willing to grant that, some of them who travel are crazy also.

The CHAIRMAN. I would rather pay $5 to save my life than to go for nothing and die.

Mr. SIMS. Referring to your remarks about the Interstate Commerce Commission. If the Interstate Commerce Commission is going to say what of these dangers are to remain, and they are going to determine that upon the amount of cost to be put upon the road in order to do so, why they are open to the same argument you are using now, and it seems to me that we have got to view this from one point or the other, either estimate them upon a financial basis, or leave most dangers untouched, unprotected.

Mr. BALDWIN. The Interstate Commerce Commission would not take an action that would stop the traffic of the United States, would it?

Mr. SIMS. I do not think it would.

Mr. BALDWIN. No, sir; it would not. It would bend its energies to improving the conditions. I think that is what they are doing, and they would try to get the best possible conditions consistent with the conduct of the business.

Mr. SIMS. It would not stop the traffic if the improvements were made, would it?

Mr. BALDWIN. Yes, sir. The railroad companies to-day could not go into the financial market and get the money that would be necessary to enable them to do these things. Who would advance millions and billions of dollars with absolutely no return offered for it? Where would you get it? You would not put your money into it and I would not.

Mr. SIMS. I would not put it in if I had it now, even under the present management. What the financiers do not get the railroads have to pay out for other things.

Mr. BALDWIN. When you consider that the railroads are steadily improving their condition and that in this country to-day they are moving traffic at the cheapest rate in the world——

Mr. SIMS (interposing). Would you say that is per ton-mile?

Mr. BALDWIN. Yes, sir; per ton-mile, per passenger-mile. It looks like they are doing pretty well and that they need encouraging.

The CHAIRMAN. I want to ask you another question to show you that I am fair.

Mr. BALDWIN. I believe you are fair, and I am trying to be fair, too.

The CHAIRMAN. It seems to me that men whose duties require them to operate on top of running trains ought not only watch with all their eyes, but get in the habit of dodging and possuming most of the time. I want to know what the practice is and what the instructions are to these men who go into those perilous positions about getting careless of themselves and about looking out for danger?

Mr. BALDWIN. The time cards and bulletins and instructions, that is, through the examination of their train masters and their local

officers with whom they are in constant touch, all go to instructing them as to where all dangers of every kind exist. It is constantly kept before them. Every form of an automatic warning that can be devised has been devised. I do not say there will not be improvements in it as time goes by, because we are all human and subject to improvements, but those are being devised and are being used; are in constant use.

The CHAIRMAN. Do you encourage employees to participate in the study of those devices and suggest them to you if they think of improvements?

Mr. BALDWIN. Indeed, we do, and we get valuable suggestions from them very frequently.

Mr. SIMS. Do the railroads which have the greatest number of danger points pay more for their employees that are exposed than railroads which do not have them?

Mr. BALDWIN. Not directly attributable to those conditions.

Mr. STEPHENS. As a rule, the opposite would be true, would it not, the better the railroad the safer the employees are, the better the pay?

Mr. BALDWIN. I would say yes.

The CHAIRMAN. Are you through with your statement?

Mr. BALDWIN. No; I have a few other things I should like to say if the committee will permit.

The CHAIRMAN. You may proceed.

Mr. BALDWIN. I can best illutrate what the effect of this bill would be by reference to the road with which I am connected, and have been connected for a number of years in charge of its engineering work—that is, the Illinois Central. It was one of the early roads of this country, and was built on the prairie at the start. It has probably the best condition of any railroad in this country so far as clearances are concerned. When started in the years gone by, it started with 15-foot track centers, and found that was wider than necessary, and reduced it. It started with a vertical clearance in excess of most companies, and notwithstanding it is really one of the best, if not the best of the large systems so far as clearances are concerned, I shoutd like to call your attention to what would be some of the effects of this bill on that system.

The Illinois Central has spent millions of dollars in track elevation in cities. It has spent this money in Chicago, Memphis, Louisville, Indianapolis, Omaha, Sioux City, East St. Louis, and many other places. Every bit of that work has been done under municipal contracts. A very large portion of it has been passed upon by the public-utilities commissions or the State railroad commissions, and the work is done very largely, almost entirely, under ordinance contracts. In some cases the city does participate in the cost of those structures. In Chicago, for instance, while it does not pay any portion of the overhead structures, it pays abutting damages for the approaches, and anything that would affect these structures in Chicago would certainly for the future increase the cost of these approaches and fall upon the city.

Then again, the public-utilities commission of Illinois is now empowered to assess portions of this cost on the cities and on the State and on the public highways and on the public-utilities companies,

and in recent decisions it has assessed them all with portions of this cost. Consequently they would be very materially affected if this bill were passed.

How can the Government nullify all of these contracts between the railroads and these municipal authorities? The work has just about been done in many cases, is going on now. The Illinois Central Railroad has several million dollars track elevation going on in the city of Chicago to-day. It has completed in the year past nearly a million dollars work of track elevation in Memphis. It is constantly doing such work. We have a single instance in Chicago at Grand crossing of a piece of work but recently completed that involves nearly $5,000,000 within the radius of change. There were four railroads involved in that work, and there stand to-day three elevations, the elevation of the street going under on one level; two sets of railroads going under on another level, and two more sets of railroads on the third level. The distance between, that is, the vertical clearance between those railroads, is but 17 feet. That was approved by the public-utilities commission or what was then the State Warehouse and Railroad Commission of Illinois. If there had been any such requirement as in this bill, a requirement of 22 feet, the railroad grades would never have been separated at that point; the cost would have been so great that the railroads could not have stood the expense and would not have undertaken it. There certainly is a case where the public life has been conserved by taking clearance that could not answer so far as this bill is concerned, because there were undoubtedly a number of people that had been killed from time to time at those grade-crossing intersections.

We have, in recent years—the Illinois Central—spent millions on terminals, in improving its condition, and enabling it to meet its operating expenses. If this bill were to go through there are miles and miles of yard tracks that could not be operated. There are new roundhouses constructed at a cost of hundreds of thousands of dollars that we could not use. There are coaling stations in the same class, freight depots, transfer platforms, etc., passenger awnings on platforms. If these passenger awnings were removed to a greater distance than they are from the tracks, the public would be exposed to the weather.

The Illinois Central has an enormous suburban business. It carries out of and into the city of Chicago every day several hundred thousand people. All of its platforms, used in the transaction of that passenger business, are on the level of the car floor, and if we were required to move those platforms back or to lower them to the elevation required, undoubtedly we should have a great many more people hurt and injured than we would under the existing conditions. Passengers frequently have to be very closely guarded in getting off and on trains to keep them from carelessness there and from hurting themselves.

Mr. STERLING. Would this bill require the railroads to change the level of their platforms?

Mr. BALDWIN. Where we have the platforms on the car levels.

Mr. STERLING. The platforms are practically on the level with the steps, are they not?

Mr. BALDWIN. The platforms are on a level with the bottom of the car floors. Where there is an enormous suburban business handled

it is essentially necessary that the great crowds of people can step directly on the trains on the level of the car floor. So in those cases these platforms are made up as high as this table, on a level with the floor of the car.

Mr. STERLING. Would this bill require them to lower those platforms?

Mr. BALDWIN. Yes, sir.

Mr. STERLING. Would it require them to set their platforms back further from the track?

Mr. BALDWIN. They could not set them back further from the track; that is the distance required; the passengers could not step from the cars to the platform; so they would have to lower them.

I will give you another illustration. The Illinois Central has storage yards in Chicago which are reservoirs for cars. The empties are sent there to serve into these freight depots; they are constantly being put in and out; they are near at hand. Those tracks are but 12 feet centers, and in some cases less. We have no records of people being hurt when cars are put in and out of the storage tracks, but if we were compelled to put them apart the distance that this bill would require it would mean that with the limited space that we have in the city those storage yards would have to be moved from 12 to 15 miles from the center of the city where they are used, and that would mean a very largely increased train movement, because cuts of cars would be continually going backward and forward this distance to bring these cars in to where they are used. Now the Interstate Commerce Commission statistics show that the percentage of injuries through the movement of cars is enormously in excess of what it is from lack of proper clearance, or what is called proper clearance by the bill. The result would be that instead of diminishing the number of people injured, while you might possibly, although we have no evidence of it now, save a few lives from clearances, you would lose a great many more from this train service.

Mr. J. S. PARKER. What would be the effect of the big tunnel, like the Pennsylvania—the New York Central goes into New York—where they have the concrete platforms right up against, practically on the same level with, the car floor? Would they all have to be moved?

Mr. BALDWIN. Absolutely, every one. Mr. Kittredge is here, of the New York Central, and is likewise familiar with the Pennsylvania in New York, and he will detail some of the defects so far as those structures are concerned.

There is another feature which has to be considered.

Mr. SIMS. You contend, then, that these troubles are inherent in tunnels and can not be avoided at all under any circumstances? I say that is the logic of your conclusion, that instead of reducing the loss of life by this bill, or any other, you contend it would increase it over present conditions?

Mr. BALDWIN. I think this bill would actually increase the loss of life over present conditions.

Mr. SIMS. And present conditions you regard as inherently irremediable?

Mr. BALDWIN. I would not say irremediable; I would say there is an improvement going on and that the condition is gradually being improved through processes that are at work.

Mr. STERLING. What are the side structures that cause most danger to trainmen—poles?

Mr. BALDWIN. Bridges, buildings—more largely buildings, I would say, than anything else.

Mr. STERLING. Buildings that belong to the railroad company?

Mr. BALDWIN. Not always; quite frequently private structures.

Mr. STERLING. Poles, are they not?

Mr. BALDWIN. There are poles, occasionally.

Mr. STERLING. It would not cost much to move those poles, would it?

Mr. BALDWIN. That depends a good deal on circumstances. If you had not any place to put the poles, it might cost a good deal. I have seen cases where poles, miles of them, were just on the right of of way line, on streets, for instance, and in cities and up against buildings. I have literally seen just such cases as that.

Mr. STERLING. In new construction, would not the railroads place those poles within the danger line, or set them back?

Mr. BALDWIN. That depends on what you call the danger line. If within the danger line prescribed by this bill——

Mr. STERLING. Do railroads continue to erect poles so close to the track as to kill the firemen or engineers when putting their head out of the cab?

Mr. BALDWIN. No; not just by putting the head out of the cab.

Mr. STERLING. That happens, however, does it not?

Mr. BALDWIN. It happens sometimes, but that is due to either one of several other conditions, one in which they are restricted so that they can not put them out farther.

Mr. STERLING. I should think that would be a very rare case where they could not set it out beyond the danger line.

Mr. BALDWIN. Well, there are very few poles that are within the danger line—very rarely. You take, for instance, the poles of a railroad, telegraph poles, all those structures are without the danger line, even as prescribed in this bill. The cases are the very exceptional ones which I speak of, where it has been found almost impossible to do otherwise.

Mr. STERLING. In constructing highway bridges over the railroad tracks, are the railroads building them now so as to endanger the lives of the men on top of the trains, or, under this new-construction, do they claim to obviate that?

Mr. BALDWIN. The new construction aims to obviate that, yes; but take the case I just gave you at Grand Crossing, in which we came only 17 feet above the street—I mean below the railroad that is above us—if those structures, that enormous construction costing nearly five million, had been brought up to the 22-foot clearance the cost would have been so enormous that the railroad companies would not have undertaken it.

You see when you take a thickly settled city, and your gradients of approach run away out involving other streets and buildings and private property that has to be purchased, and so forth, you get into complications almost beyond conception, and it becomes impracticable for the railroad companies to raise the money to do it.

Mr. J. S. PARKER. The plans you just cited, were they approved by the city of Chicago?

Mr. BALDWIN. Yes, sir.

Mr. J. S. PARKER. I say were they approved, the plans, the specifications?

Mr. BALDWIN. Yes, sir; they were approved, and I say similar plans are daily being approved by the city of Chicago, and by other cities all over the country.

You take this question which has just been referred to, of private structures. That constitutes one of the most difficult things to handle, so far as legislation is concerned, because you have the influence of the public that is back of it to put a stop to it. Legislatures do not pay very much attention to the convenience or the cost to the railroads. They think, as a general proposition, so far as the railroads are concerned, that they can make them go to any cost; but when it comes to affecting the individual, as that individual has influence, why, it is a very different thing, and there are times when the influence of the individuals are so great as to make it practically impossible to get legislation to bring track elevation about, even when the railroad companies want it themselves. I have known such occasions as that.

Let me illustrate by taking the example of the city of Indianapolis. Indianapolis is a great manufacturing center. It is on the prairie. It is practically level. Railroads were built into it intersecting each other and intersecting the streets over the entire city. Industries sprung up. These industries were served by these tracks at level and on different elevations, and when the time came that an effort was made to bring about such elevation in that city the strongest opponents of it for a long time and the ones who kept it off were the individual interests, not the railroads. But the industries found their business would be injured, and the result was that track elevation was a long time in being brought about. I mean the beginning of track elevation, because it is very far from being complete, and will be completed only after years and years of labor, and in Indiana the State bears 25 per cent of the cost.

The CHAIRMAN. It may be with varying effectiveness, but the time has come now that influence is attempted on both sides and it is something like an irresistable object meeting with an unyielding substance, there is going to be a collision either here or in the municipalities or elsewhere; you will find representatives of the operatives on the one side and representatives of the organization on the other, and they could fix it if they wanted to.

Mr. BALDWIN. I do not doubt it and I think the net result and the practical result will be good.

Mr. CULLOP. You do not mean to say in your statement that Indiana bears 25 per cent of the cost, the municipality?

Mr. BALDWIN. That is the municipality, I should have said. The municipality is limited, it is circumscribed to the extent it can bond itself; I do not remember just what it is. After it raises the money it has to furnish 25 per cent of this track elevation cost.

Mr. CULLOP. That applies only to cities under county organizations?

Mr. BALDWIN. Yes; that is right.

Mr. CULLOP. I should like to ask you a further question. Have there been any fatalities from mail cranes?

Mr. BALDWIN. Yes, sir; occasional fatalities from mail cranes.

Mr. CULLOP. They would not be expensive to move, would they?

Mr. BALDWIN. Yes; that would involve a great deal of cost to move mail cranes. There are two things to be considered. One is the momentum of the train, affecting the mail as it is removed from the crane, and the other is the clearance, so far as the crane is concerned, and railroad companies have for years been trying to find the means that would save the most life and produce the best results so far as the distance is concerned at which they can take mail from the car and the distance at which it is safe to place the crane.

There are instances, in which the mail man has been killed through the failure to have it at the proper distance; that is, through the operation of his mail carrier. Then again, on the other side there are instances where employees have been injured by the mail crane because it is too close, and the result which has been arrived at is what has come through years of practice as being the mean distance that affords the greatest safety all around.

Mr. CULLOP. How is the effort progressing to discharge the mail at the bottom of the car instead of up towards the top?

Mr. BALDWIN. I am not familiar with that. Mr. Crawford, of the Pennsylvania, is here; he may be able to give you some information about that, but I can not. I do not know of any recent efforts that have amounted to anything so far as discharging from the bottom of the car is concerned.

Mr. STERLING. May I ask you another question about the platform?

Mr. BALDWIN. Yes, sir.

Mr. STERLING. It says this section shall not apply to station or freight house platforms which have a vertical height of not more than three feet and eleven inches measured from the top of the track rail to the top of the platform entering the car. Now that is about the distance it is from the top of the track rail to the top of the platform, is it not?

Mr. BALDWIN. Some of them are, and some of them are higher in the passenger suburban platforms.

Mr. STERLING. Would it not be just the same—all these cars are about the same height, are they not?

Mr. BALDWIN. They are pretty much the same height. I think they are generally the same height.

Mr. STERLING. You would not have to move the platform if it were below the level of the car?

Mr. BALDWIN. But it comes inside the clearance distance.

Mr. STERLING. You would not have the platform higher than the step of the car, so the passengers would have to step down?

Mr. BALDWIN. Step up.

Mr. STERLING. No; if the platform were higher?

Mr. BALDWIN. They would have to step up getting from the car, getting off.

Mr. STERLING. And have to step down getting from the platform to the car; but you do not have them that way?

Mr. BALDWIN. No, sir; certainly not.

Mr. STERLING. You do not have them above the floor of the car?

Mr. BALDWIN. We do not have them above the floor of the car.

Mr. STERLING. And you would not have to move the platforms?

Mr. BALDWIN. If the exception applies to a rule of 3 feet 11 inches, I will say that we would not have to move the passenger platforms. I may have overlooked that.

Mr. STERLING. It is 3 feet 11 inches.

Mr. BALDWIN. I will withdraw what I said, then, about the suburban platform.

The point that I wished to dwell on is the fact that the railroad companies have certainly been increasing the size of their locomotives until probably they have about reached the limit, or very near it. They have been increasing the size and capacity of their cars. There is not a railroad company to-day that could meet its competition if it had done so, and yet, notwithstanding this fact, there has been a steady decrease in the number of people that were injured due to clearances.

I think that shows very conclusively that the railroad companies are trying to handle the situation, and that they are handling it, I believe, to the very best of their ability. They are alive to the necessities, and it is the subject of constant discussion.

Take that period that Mr. Morse referred to—that is, a five-year period from 1904 to 1908, as compared with the five-year period from 1909 to 1913. The accidents due to clearances decreased 27 per cent. That is a very great improvement and it covers a long period, showing that the decrease has been steady.

The CHAIRMAN. Was any part of that decrease due to the efforts of the railroads to increase the clearances while they increased the size of their engines and locomotives?

Mr. BALDWIN. Some of it, doubtless, but mainly due to improvements in the air brakes, in the safety-first campaign that is waged so vigorously by the railroads, and to their general efforts to meet that situation.

The CHAIRMAN. What is the fact as to what they are doing about these clearances? Are they widening the scope in which the cars and engines run as fast as they can, and making them wider and larger in their new structures in order to accommodate the larger cars?

Mr. BALDWIN. Generally they are, so far as I know. All of them are, so far as my experience goes.

The CHAIRMAN. I should like to know what they are doing in the direction this bill seeks to require them to do?

Mr. BALDWIN. I think, just as I stated, that they are increasing their clearances to some extent, although I do not believe that that would materially affect these figures. I think it is more largely due to the air brakes than anything else that avoids the necessity for trainmen being out on their trains. As a matter of fact, men are on top of their trains very rarely now, and the rules of most railroads require them to be out only under certain conditions under which they would be exposed to very little danger.

Mr. R. W. PARKER. Can you give us the figures for five years?

Mr. BALDWIN. I took the percentage and I shall be glad to give them to you.

Mr. COADY. Do they apply to all kinds of accidents?

Mr. BALDWIN. You mean these I have just given?

Mr. COADY. Yes.

Mr. BALDWIN. No; those are due to clearances.

Mr. STERLING. I should like to get your estimate on this proposition. Suppose the railroads would move all their coal bins, stocks, chutes, poles, and mail cranes back beyond the danger line, about

what percentage of the danger would be left if they removed those things?

Mr. BALDWIN. I could not say. That would be a guess.

Mr. STERLING. That would leave the tunnels and leave the natural rock embankments and warehouses. It would reduce the percentage of danger very largely if those were removed, would it not?

Mr. BALDWIN. It would reduce the percentage of danger, yes, sir.

Mr. STERLING. That would not be expensive to do, would it?

Mr. BALDWIN. In many cases it would be very expensive; that is, it would reduce the percentage of danger from clearances. In some cases the danger would be increased. If you put the coal chutes further away men might be injured in taking coal.

Mr. STERLING. Side obstructions?

Mr. BALDWIN. That is a side obstruction.

Mr. STERLING. Yes; those I read are all side obstructions, and that would leave the tunnels and the warehouses and the natural rock embankments as side embankments.

Mr. HAMILTON. What is the list you read there?

Mr. STERLING. It says, "Tunnels, warehouses, coal bins, stock chutes, poles, mail cranes, embankments of earth or natural rock, or any other fixed structures or obstructions, overhead, side, or otherwise." There would not be very many things included in that general word "other," would there? Nearly everything is specified that constitutes danger as a side obstruction there in that bill. Now, could not the railroads remove those things that I specified without any very great expense?

Mr. BALDWIN. No, sir; they could not. The expense would be enormous. I would not be able to differentiate those now and tell you what proportion of this $716,000,000 is due to that. But there is another way of looking at this thing, and that is, that the fact that obstructions may be encountered almost at any time sometimes leads to safety rather than to danger because it puts men on their guard all of the time, whereas if there is only an occasional danger there may be a greater possibility of injury. I am not arguing that that should be followed out, but I say that is somtehing you have to consider.

Mr. STERLING. On that point the railroad companies—your company and other railroad companies—have very strict rules calling attention to such dangers. It is all right to have them, but you must take into consideration that these men running a railroad train have got a whole lot of things to think about and they can not have their minds on all these obstructions along the line of the track and attend to their business at the same time. It is not within human ability to do that. And if you remove one of those things it would reduce the danger that much. It seems to me that the railroads ought not object. In the long run I do not think it would be impossible to remove certain of those obstructions which I have read there.

Mr. COADY. Would the removal of those obstructions necessitate the acquisition of more land?

Mr. BALDWIN. Oftentimes, yes; when it is practically impossible to get it except at an enormous cost.

Will you say that lives will be saved by moving the mail cranes further away from the center of the track than they are?

Mr. STERLING. Mail cranes?

Mr. Baldwin. Yes.

Mr. Sterling. I would think that they would be.

Mr. Baldwin. I mean from your own knowledge, would you say that?

Mr. Sterling. No; I would not say from my own knowledge.

Mr. Baldwin. In my judgment, we would probably lose more lives by moving the mail cranes back than by leaving them. That is my judgment and experience.

Mr. Sterling. How would that be?

Mr. Baldwin. Because you would increase the length of the arm of the catcher in the car, and very materially increase it. That would make a longer lever arm against the mail bag as it is taken off and would incur a greater danger to the man who was inside of the car; and, again, there would be, unless all of your obstructions were removed, a greater danger than in throwing them out to catch mail he might strike something else. My judgment is there would be an actual loss of lives, instead of saving them, by making a material increase in distance under the present conditions.

Mr. Sterling. This requires the mail crane to be set back 36 inches clear of the train—of all parts of the train. Is that an excessive distance, an excessively long arm for a mail crane?

Mr. Baldwin. I would think so.

Mr. Sterling. How long are they now?

Mr. Baldwin. Just how far they project I do not remember. I will find that out and tell you, though. Seventeen or eighteen inches.

Mr. Sterling. You will have an opportunity, in correcting your testimony, to insert all these things you are not certain about now.

Mr. Baldwin. I shall be very glad to do so.

The Chairman. Have you finished?

Mr. Baldwin. I believe I have finished, sir.

Mr. Esch. One question. Does the United States Post Office Department prescribe the standard and the form of the mail crane?

Mr. Baldwin. Not absolutely, so far as I know. I am not familiar with exactly what are the requirements of the United States Post Office Department. In general we conform to them.

Mr. Esch. My idea was if the Post Office Department prescribed the form and standard the Government might be partially responsible for the accidents.

Mr. Baldwin. The form and standard are approved by the Government, you understand, and the Government recognizes the condition. Whether or not the Government absolutely specifies in dimensions the exact distance I am not quite sure, but these forms and standards are approved by the Government, and these plans are approved by the Government. Mr. Kittredge can give you some information about that.

Mr. Esch. You understand there are some approved forms to catch and load mail. I have in mind one known as the Rupp patent, which was illustrated on a track near this city. They may be expensive to install, but they absolutely eliminate any danger. Have any of the roads adopted that system or a like system?

Mr. Baldwin. I do not know about that particular system, but I will say there are some thousands of different forms of patents, covering mail cranes and mail-catching devices. I know one case in which the Government brought such influence on a railroad company

to install them that they were installed at a very large cost, and they were an absolute failure, and the railroad company had to take them out at a very heavy expense. I doubt if there is any one device that you will find among the patents for receiving or delivering mail that has merit. As a matter of fact, where one has had merit a thousand have had no merit, and I think the railroad companies are keeping abreast of the best state of the art.

Mr. ESCH. You intimated that the Post Office prescribed the best state of the art?

Mr. BALDWIN. I said it approved appliances. I did not say they prescribed it.

Mr. STERLING. Is the metal crane in use now the same one that you have used for many years? Has it been improved?

Mr. MORSE. It has been improved. There are several different forms of metal crane release.

Mr. FAULKNER. Mr. Kittredge is the next witness. Mr. Kittredge, will you give your name and post-office address, and also your position, to the stenographer?

STATEMENT OF MR. GEORGE W. KITTREDGE, CHIEF ENGINEER OF THE NEW YORK CENTRAL RAILROAD, GRAND CENTRAL TERMINAL, NEW YORK CITY.

Mr. KITTREDGE. Mr. Chairman and gentlemen, Mr. Morse has said that the enactment of the proposed bill into a law will, if his first alternate is followed, result in enormous expenditures on the part of the railways. The figures given by him are so large that without some explanation as to why they are so, it might seem that they are extravagant or have been worked up with the idea of making them as large as possible.

It happens that the figures included in his total for about 3,500 miles of line were worked up under my personal direction and for that amount, I know that the figures given are underestimated rather than overestimated.

Just follow me, if you will, over a stretch of the New York Central Railroad. Let us start at New York. There is the Grand Central Terminal, that has been under construction since 1903, and upon which there has been expended millions of dollars. The question of clearances for this terminal was discussed earnestly and long from all points of view, and a decision was reached after mature deliberation that a minimum distance of 6 feet from the center line of track to side obstructions and 12 feet between center lines of tracks were safe and proper distances in this particular locality, because of the specific conditions under which these tracks were to be used and operated. Bear in mind, please, that in this terminal only passenger trains are handled, that switches are operated by power from signal stations and not thrown by hand from the ground, and that because it is a "terminal" the speed of the trains is necessarily slow because they are either just starting or just stopping.

Having decided upon the distances of 12 feet between tracks and 6 feet from track center to side structures, there followed the planning of the location of columns or supports for the upper level tracks (you know that here there is a double tier of tracks, the one above being supported by columns that rest in the immovable rock below

the lower one), and for the supports of the city streets, the station, and office buildings, the hotels, club houses, and apartment houses that have already been erected and for those yet to be erected. The places for the supports of those yet to be erected have had to be selected and planned at the outset, so as to be sure that they could finally be available.

If these distances of 6 feet from the track centers are to be increased to 8 feet—which would be necessary if a clear space of 36 inches, as required by the proposed act, was maintained beyond the sides of the equipment (assuming, for the argument only, that the equipment is 10 feet wide—it is really more)—the entire lot of improvements would have to be rebuilt at enormous cost.

The vertical clearance of 6 feet above "engine, car, or vehicle" in this terminal would have to be obtained either by raising the streets and buildings overhead or lowering the tracks. The existing vertical clearance above engines is 3 inches; so to get 6 feet on each level would require an additional height of 5 feet 9 inches for each level, or 11 feet and 6 inches in all. To elevate the structures already built overhead is admittedly out of the question. Fancy jacking up the Biltmore Hotel or the Yale Club 11 feet and 6 inches.

Mr. SIMS. Could the tracks be depressed?

Mr. KITTREDGE. If it were physically possible to lower the tracks in spite of drainage (we had to build a new sewer 6 feet in diameter from the terminal to the East River because our excavation took us way below all city sewers, and in that sewer we have a fall of less than 2 feet), the cost would be enormous.

Leaving the Terminal, we come to Park Avenue tunnel, where we have tracks at one place only 10 feet 11 inches on centers and where the vertical height is 15 feet 1 inch above rail.

To modify these clearances would involve changes in city water pipes, sewers, drains, foundations of high buildings, to say nothing of demoralizing traffic—for traffic can not be suspended—and the cost of doing work under regular train operation is many times as expensive as doing it where there are no trains to interfere or be interfered with. There are between 500 and 600 regular trains daily through this tunnel, with the maximum approaching 800 on special occasions.

The Pennsylvania Terminal in New York would illustrate the great cost of changes there. It, too, has been designed and erected with clearances that are prohibitive under the proposed act.

Coming now to the points outside of terminals—the New York Central tracks in its electric zone, 60 miles in extent, are 12 feet on centers—through New York City limits on the Harlem Division the tracks are between masonry walls 18 to 20 feet high, behind which are streets or buildings or parks which it would be impossible for the railroad to acquire by purchase; through cities like Mount Vernon, White Plains, Yonkers, Ossining, Irvington, and many other places are improvements carried out under orders of the public-service commission in connection with grade-crossing eliminations, the cost of which have been borne jointly by State, municipality, and the railroad. Improvements at these places were planned for all time to come, with clearances less than those required by the act, and to change them now would involve larger sums of money, in many cases, than were involved in the original work. It is not at places like these that accidents to trainmen are most frequent. There are places along

the Hudson River where the river lies deep on one side and the hills rise high on the other. To widen the space between tracks and give greater side clearance than now exists would run into money very fast.

Examples similar to the above can be found throughout the older settled parts of the country, particularly in the East. Mr. Morse has made some reference to the separation of grade crossings saying that the enactment of this law would hinder or retard the progress of this desirable work.

In almost all cities of large size to reduce the cost of work and to make separation possible, special clearances are agreed upon by the State, city, and railroad; for example, from top of rail to overhead structure in New York suburban territory, 16 feet; in Buffalo, 17 feet; in Chicago, 17 feet, etc.

The public service commission of the second district of New York issued a specific order forbidding the men to ride on top of cars throughout this suburban territory after they had specified the vertical clearance of 16 feet. With the clearances stipulated in the proposed bill these special clearances, legally established, would become illegal because they are less than those prescribed.

Mr. HAMILTON. You say a clearance of 16 feet and 17 feet. From what point to what point do you count the feet?

Mr. KITTREDGE. From the top of the rail to the underside of the overhead structure.

Mr. HAMILTON. How high is your ordinary car?

Mr. KITTREDGE. In the neighborhood of 14 feet.

You will perhaps say that many of the illustrations given are exceptional and unusual. I grant that they are exceptional and unusual in the gross amounts of money involved, but they are not exceptional or unusual in principle. They very clearly, however, bring out two things, first that an enormous amount of money will be involved to change existing clearances to those proposed; and second that the whole question of clearances is one which should be considered in the light of reason and with full consideration given to local, neighborhood, or zone requirements. Conditions affecting clearances change with locality, time, use, and other circumstances.

In regard to the men riding on the trains, the conditions now are different from those that existed before trains were fully equipped with air brakes. On a recent daylight trip from Buffalo to Albany, I met or passed, by count, 59 freight trains, and only two of those trains had men riding on top. There was no occasion for them to ride on top. Freight is classified at the yards from which they start in such a way that there is a minimum amount of "breaking up" of the trains in transit. Through trains are made up at one end and carried through without change to the other end of the division.

Mr. SIMS. Then you say the men do not ride on top of freights by reason of the orders of the railroad company, or in the necessary performance of their duties?

Mr. KITTREDGE. Of course there are times on local freights and pick-up trains where certain men at certain places do ride on the cars.

Mr. STEPHENS. Why? Why do they do that?

Mr. KITTREDGE. They ride on the cars so as to be in the vicinity of where cuts of cars are to be made when they reach local stations

to save time in going from the caboose or from the engine to the car where the trains are to be cut and cars set off or picked up.

Mr. SIMS. That riding is necessary in the performance of their duties, then?

Mr. KITTREDGE. Not absolutely necessary, but probably desirable on a minimum number of trains, the local and pick-up trains.

Mr. SIMS. Is it necessary in the performance of their duty under such circumstances to ride on top?

Mr. KITTREDGE. Not absolutely necessary, but desirable from the point of saving time.

Mr. SIMS. So they do it by order of their superiors?

Mr. KITTREDGE. They do not have to have orders to do that. They have to get over the road as quickly as they can. It saves them time to be on top.

Mr. J. S. PARKER. Are they on top in case of any overhanging structure, where they have to get on top of the freight cars to uncouple them?

Mr. KITTREDGE. They may or may not be. It depends on local conditions where they are. On some stretches of the road there are few overhead or side obstructions which come within the limits of the figures given in this bill. At other places there are numerous ones. Take through the city of Buffalo there are numbers of places where the side and overhead clearances are less than required here. You take it in the open stretch of country between Buffalo and Albany and there are miles and miles where there are no obstructions. There is no uniform rule in regard to that.

Mr. SIMS. Do the railroad companies prohibit their employees from riding on top of the trains when it is not necessary in the discharge of their duties?

Mr. KITTREDGE. I do not think they need to issue such orders; they are intelligent men, you know.

Mr. SIMS. But the city of New York thought they needed it according to your statement of a few moments ago?

Mr. KITTREDGE. Yes. That was an innovation in that locality because without that lesser clearance the grade crossing eliminations would have been enormously expensive. That was an order of the Public Service Commission of the State and affected territory extending about 60 miles outside of the city of New York as well as the territory within the city.

Mr. STERLING. Is that only for passenger trains?

Mr. KITTREDGE. That is territory used by both passenger and freight trains. There is a portion within the City limits—between Harlem River and Forty-second Street—which is exclusively passenger, but in the rest of the city of New York and for 60 miles outside, there is a very heavy freight traffic in addition to the passenger traffic.

Mr. SIMS. If Congress should pass a law prohibiting railroad employees from riding on trains, would it always meet with the approval of the management of the road?

Mr. KITTREDGE. I do not think there is any "always." There are places where such a law would be welcomed by the railroads. There are other places where it would work a hardship.

Mr. SIMS. If it is not necessary in the duties to be performed and is left simply in charge of the employee and he rides up there as a

matter of taste or convenience, why not save the railroad or those who pay the freight charges from that contingency?

Mr. HAMILTON. He makes it clear that there are occasions when it is necessary for the men to ride on top of the cars, and he also makes it clear that these men know enough to keep off when it is not necessary.

Mr. SIMS. I got the idea that the men were doing this of their own accord as a matter of convenience.

Mr. KITTREDGE. The case is just as stated by the gentleman on my right [Mr. Hamilton.]

If it should be argued that under the proposed bill the Interstate Commerce Commission "may thereafter (six months from passage of the act) and from time to time upon full hearing and for good cause extend the time within which the common carrier shall comply with the provisions * * * of the act," i. e., provide 36 inches side clearance and 6 feet vertical clearance, then it will be answered that the number of cases will be so great upon which the commission will find it reasonable and desirable to grant the extension that the law will become practically inoperative, and therefore it would be better not to have the law.

The burdens that would be imposed upon the railroads by the proposed bill as drawn, which applies alike to construction properly and legally erected before its passage as well as to future construction, and applies alike to tracks over which only passenger trains run, as well as to tracks used for freight trains, would prove unbearable, and we believe and hope that you will so conclude.

Mr. SIMS. Do you think the Interstate Commerce Commission would relieve you permanently of the conditions that you spoke of in New York and other places, by orders, to such an extent that the burden will not be unendurable?

Mr. KITTREDGE. Not under the law as drawn. It simply gives the Interstate Commerce Commission authority to extend the time. It does not permit permanent exemption from changing.

Mr. SIMS. Relieve them permanently?

Mr. KITTREDGE. Permanent relief is not provided for.

Mr. RAYBURN. One witness before you, I think, said that to comply with this law he had approximated it would cost the railroads $716,000,000.

Mr. KITTREDGE. No; that was the estimate that it would have cost to have complied with the La Follette bill. To comply with this bill will cost from two to three times as much as that.

Mr. RAYBURN. Suppose that tunnels are absolutely cut out of this bill, what percentage of the expense do you think that would cut out?

Mr. KITTREDGE. I can not give you that in percentage. It would cut out a great deal.

Mr. RAYBURN. Half?

Mr. KITTREDGE. Oh, no; 25 per cent, maybe.

Mr. RAYBURN. Not more than that?

Mr. KITTREDGE. I think not.

Mr. J. S. PARKER. I want to ask you how this would affect the Eleventh Avenue situation?

Mr. KITTREDGE. We could not carry out our Eleventh Avenue project.

Mr. J. S. PARKER. It would be a physical impossibility to comply with this rule on Eleventh Avenue?

Mr. KITTREDGE. Absolutely.

Mr. J. S. PARKER. How many cars run over that Eleventh Avenue every day? Can you estimate the number?

Mr. KITTREDGE. No; I do not know how many go there, but it runs up into the hundreds.

Mr. J. S. PARKER. Just explain briefly why you could not manage it at Eleventh Avenue.

Mr. KITTREDGE. We have been negotiating with the city of New York to my personal knowledge for 10 years, and I have no doubt a great deal longer than that, for the elimination of our tracks at grade on the west side of the city, and only within the last few weeks have we practically agreed with the city upon plans which will bring about very desirable results—desirable from the standpoint of the city and desirable from the standpoint of the railway. The clearances provided there are so much less than those provided in this bill that it would be utterly impossible to carry out the scheme and conform to the clearances specified. Where we tunnel under Riverside Park we have provided for the same clearance that we have elsewhere in New York City, 16 feet. If we have to go up to 21 feet—6 feet above the highest equipment—the top of the tunnel will stick up into the park. That would never be permitted for a minute by the city.

Mr. J. S. PARKER. That authorization comes from the State of New York as well as the city?

Mr. KITTREDGE. Yes, sir. I do not know just to what extent the State of New York will join.

Mr. J. S. PARKER. I happen to know that the State of New York has to authorize it——

Mr. KITTREDGE. I think so.

Mr. J. S. PARKER. Because it extends over a period of more than 10 years.

Mr. KITTREDGE. Yes.

Mr. STEPHENS. Would this bill be acceptable to the railroads if discretionary power was given to the Interstate Commerce Commission to decide what provisions of the act were practicable of enforcement?

Mr. KITTREDGE. It would be very much better, that is as far as I could go. Just take the terminal in New York; anything that would make that change obligatory 50 years or even 100 years hence would not be acceptable. There are many other similar cases, such as Buffalo and elsewhere.

Mr. STEPHENS. It is very apparent that no arbitrary rule can be applied to all these conditions.

Mr. KITTREDGE. That is the idea.

Mr. STEPHENS. Somebody has to have discretionary power, it seems to me, to adjust these matters between the people, the employees, and the railroad companies.

Mr. KITTREDGE. Yes.

Mr. SIMS. I want to ask you what effect this law or one similar to it would have on preventing or retarding new railraod construction throughout the country? It seems that during the last few years

we are in a condition of arrested development so far as the building of new railroads is concerned, I suppose due to financial difficulty.

Mr. KITTREDGE. That is true.

Mr. SIMS. What effect do you think a bill of this kind would have?

Mr. KITTREDGE. It would have a deterrent effect because unquestionably future construction carried on under a bill requiring clearances such as these would involve an enormously increased expense at those portions of the road where the expenses are now the greatest; that is, in the terminals and in the cities and in the towns.

Mr. SIMS. Where railroads are being built, where it is entirely new construction, are the roads adapting themselves to substantially what is required in this, in new construction?

Mr. KITTREDGE. No, sir; not in the cities.

Mr. SIMS. I mean in a general way.

Mr. KITTREDGE. Not to the great extent required in this bill. For example, this bill calls for 36 inches side clearance outside of the largest equipment. That would be 6 feet both sides, and the largest equipment to-day is about 10 feet 9 inches; that would make 16 feet 9 inches clearance between the trusses of bridges or between buildings or walls. I do not know of any roads in the eastern country that are building bridges that are 16 feet 9 inches in clear width. They are building them 15 feet clear.

Mr. SIMS. Where it is new construction entirely, not under city conditions or exceptional conditions, what I was trying to get at was, would the additional cost to the roads in complying with a bill like this or one similar be so great as to make it impossible?

Mr. KITTREDGE. It would in the cities, but between cities it would not be such an onerous proposition, and yet there are locations such as I have cited along the Hudson where it would mean an enormous expense.

The CHAIRMAN. Have you ever looked into the comparative proportion of casualties, as between the general run on the line and the terminals in the cities?

Mr. KITTREDGE. No; personally I have not. They are matters of public record through reports of the Interstate Commerce Commission.

The CHAIRMAN. I want to know whether the greater care and caution at the terminals and the lower speed, contribute to a lower rate of casualties than occur out on the line?

Mr. KITTREDGE. I am sorry I can not give you now the actual figures in detail.

The CHAIRMAN. You can put that in your answer when you revise your testimony.

Mr. KITTREDGE. Yes. Accident Bulletin No. 56 for year ending June 30,1915, on pages 24 and 36, shows that for the whole United States the total number of train employees killed by overhead or side obstructions was 44, divided about 60 per cent on the line and 40 per cent in yards.

This same bulletin shows that the number of trainmen injured in yards is about 65 per cent, while those injured on the line are 35 per cent.

Mr. DEWALT. You have spoken of tunnels, and in reference thereto I suppose you have in mind these tunnels in the city of New York, have you not?

Mr. KITTREDGE. Among others; yes, sir.

Mr. DEWALT. In your remarks have you taken into consideration the clause of the bill on page 3—have you a copy of it?

Mr. KITTREDGE. I have not one with me.

Mr. DEWALT. I am reading on page 3, commencing at line 3:

And the free space or clearance between the top of said engine, car, or vehicle, or any part thereof, so moved or hauled, or permitted to be moved or hauled; and any overhead wires, bridge, viaduct, or other obstruction, except tunnels, passing over or above its tracks shall be not less than 6 feet.

Now, as to tunnels, this bill does not provide for any clearance such as you have intimated.

Mr. RAYBURN. It just excepts overhead clearance. It does not except side clearance.

Mr. KITTREDGE. I would like to answer that.

Mr. DEWALT. Have you taken that into consideration?

Mr. KITTREDGE. Yes. In New York our side clearances are often worse than our overhead clearances. As I stated, we have at one place in Park Avenue Tunnel a situation where the tracks are only 10 feet and 11 inches on center. Now, to widen out those tracks to 13 feet, as required here, would require the reconstruction of the tunnel, the moving of the side walls, and all the incidental expenses connected with it.

Mr. DEWALT. So your difficulty would not be so much because this bill provides for the overhead clearance of 6 feet, but your difficulty would be in the side clearance?

Mr. KITTREDGE. Yes; and incidentally in the overhead, because the wider the space that is spanned by the iron beams, the deeper those beams must be.

Mr. DEWALT. That is, you would still have to take out the top?

Mr. KITTREDGE. You would still have to take out the top and rebuild that. In the Park Avenue tunnel we are low enough through a large portion of the distance so that we would not have to disturb the surface. If you are familiar with the situation, there is quite a rise in the natural surface of the ground, and through a considerable portion of it we are low enough so as not to disturb the street surface, but that applies only to a portion. There is a large portion that would have to be rebuilt.

Mr. DEWALT. Would that do away with it, part of this damage of which you speak in reference to sewers, or would that still remain?

Mr. KITTREDGE. No; the sewers are all practically located along the side walls.

Mr. J. S. PARKER. You were speaking of bridges outside of the city. Of course you had reference to bridges that were to do away with grade crossings?

Mr. KITTREDGE. No; all bridges.

Mr. J. S. PARKER. No; I mean as a rule bridges would do away with grade crossings?

Mr. KITTREDGE. No.

Mr. J. S. PARKER. The bridges that would do away with grade crossings, the plans and specifications for those bridges are approved by whom?

Mr. KITTREDGE. They are approved by the railroad company, by the municipality and by the State.

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Mr. J. S. PARKER. In other words, they are approved by the Public Service Commission of the State of New York, are they not?

Mr. KITTREDGE. Yes, sir.

Mr. J. S. PARKER. It does not make any difference whether you agree and the municipality agree, if the State of New York does not agree through the public-service commission, you can not build the bridge, can you?

Mr. KITTREDGE. You are right.

Mr. J. S. PARKER. In other words, to put this into effect would be a violation of the right of the city of New York to govern its own property and its own conditions?

Mr. KITTREDGE. I have said before that the passage of this bill would make illegal all of those crossings which have been legally constructed under the laws and regulations of the State and municipalities.

Mr. J. S. PARKER. By the payment of a certain percentage by the State and by the municipality, and in the country just the same—I am speaking entirely of the State of New York.

Mr. KITTREDGE. In the entire State of New York the general proportions are that the railroad company pays 50 per cent of the grade crossing elimination, the State pays 25 per cent, and the municipality pays 25 per cent.

Mr. J. S. PARKER. If this bill should pass as it is, with no exception, it would make the 50 per cent paid by the citizens of the State of New York of no particular value? It would all have to be rebuilt? The money they have already spent to eliminate grade grossings would be virtually lost?

STATEMENT OF MR. GEORGE W. DAILEY, SUPERINTENDENT CHICAGO NORTH WESTERN RAILROAD, CHICAGO, ILL.

Mr. FAULKNER. Give your full name and post-office address, please.

Mr. DAILEY. My name is George W. Dailey; residence, Chicago, Ill.

Mr. FAULKNER. And also give your official position.

Mr. DAILEY. I am superintendent of the Chicago North Western Railway.

Mr. SIMS. You may proceed in your own way.

Mr. DAILEY. I will state briefly and comprehensively, if I can, the way the proposed measure appears to a railway operating officer in my position in direct charge of the men that will be affected, and responsible for carrying out the detailed work of a division. One decidedly objectionable feature is that it appears to me to be too broad in scope. Includes too many classes of men. In addition to applying to telegraphers, train dispatchers, and station agents, it can also be interpreted to apply to switch tenders on the ground, brakemen throwing switches, possibly to yardmasters, who might telephone from one end of the yard to a tower about tracking an incoming train, and it would undoubtedly apply to the conductor of a train or an engineman that would have to use the telephone incidental to his trip. It would confine him to an eight-hour day that trip. It is too far-reaching, unfair, unnecessary, and impracticable.

There are a number of different classes of labor affected, and there is a difference in the classification of work, a difference in their duties and responsibilities. You no doubt know the difference in the duties of a conductor, an engineer, a brakeman, a station agent. One particular difference is in the work of a train dispatcher, as compared to an operator. A train dispatcher is a man on the division superintendent's staff, located at division headquaters, who makes up and plans out all orders and instructions directing and controlling the movements of trains, and sends them through the telegraph operator at a station, or a tower, to the conductor and engineer on trains, who execute those orders. The operator is the intermediary between them, and is not the busy directing genius weighted down with care and responsibility as has been stated.

In other words, the train dispatcher is the originator, the motive force in putting out train orders. The operator is the man that takes those orders by telegraph or telephone from the train dispatcher and delivers them to the conductor and enginemen. That is the universal practice on all railroads.

Another objectionable feature in this proposed bill is this: There is no leeway or overlap allowed for men relieving each other, where two or more men are employed. A train dispatcher can not always let go of his work at the exact end of an eight-hour period and transfer it immediately to his successor. Our train dispatchers now all work eight hours, and I presume they do on all the standard railroads. There are more or less instructions, information, orders, and situations to be explained by the man that is working before he can safely and properly let loose of his work and give it to another man. The danger period of a train dispatcher's work in my opinion is when he is transferring his work and his orders to the man that is going to succeed him. That is when the greatest care and attention is necessary.

Mr. Hamilton. This overlapping time would be as much as half an hour?

Mr. Dailey. I should say it would be in an average train dispatcher's office. There are offices I have seen where it would be an hour, when I have taken an hour myself to let go and transfer and illustrate to my successor. Many trains moving at the same time—some waiting for orders, etc.—lined up in such a way that I was the only man that could straighten them out right, because I had been handling them myself—couldn't drop the work or let go until the right time came.

Now, that same situation will exist in heavy interlocking towers, like you have at your large city terminals, New York or Chicago. The trains may be lined up and coming in in a certain way or possibly an unusual way—he may have some instructions issued to him by a train dispatcher or by some superior concerning the movements of trains, and may be tied up in such a manner that his successor could not immediately step into that tower and take up the work and carry it along. He must have more or less time in which to get the run of the business from the other fellow, and the other fellow has to have more or less time in which to give it to him, clearly, intelligently, and properly and safely. Those facts apply at any heavy office or tower.

Another thing that is positive. It is a fact that in some of the larger telegraph offices, outside of dispatcher's offices and outside of

large terminal towers, that one operator can not instantaneously relieve another. He may have train orders or various instructions in his charge for delivery to different trains; the train dispatcher may be sending him a train order just at the time his eight-hour shift is up. He may be holding a train for orders; he is the only man that can properly and safely finish that transaction. That is why it is absolutely necessary to have a leeway. This proposed bill does not permit a leeway, does not provide for an overlap. There is nothing said about that. The present law, under which we are now operating, provides for that by making the hours nine instead of eight at such places as I am talking about, and the present law is the only sensible, practicable, and safe basis to work on. It can not be otherwise and can not be worked out any other way.

You must have in our line of business more or less time to transfer your work and your understanding of your duties from one man to another.

There is another serious objection. This proposed bill forces us to give 16 hours off duty. That would apply to anyone. In a three-man office, a two-man office, or a one-man, 12-hour office. At the present time, under the existing law, if a man is a little late in getting around to that three-man office, if a man is sick, if a street car breakdown delays him, or he is on an incoming train that is late, he has a little time to get there without forcing the company to explain excess hours, for which the company is not responsible, the man himself being responsible. Under this 16-hour provision he could not do it. We would be absolutely up against it if every man was not promptly on time and appeared at his office a few minutes ahead of his working time, otherwise there would be an excess or violation every time such a thing occurred, and such thing occur quite often.

Under present law we can call a man in an emergency or in necessity after he has had 10 or 12 hours' rest, which is a great aid and benefit and no harm to the man. The average man don't need 16 hours' rest, and can work just as well as not. Proposed bill is too drastic in forcing 16 hours' rest.

The present law, it seems to me, took into consideration those different points that I have mentioned. It is practical and it is safe. I do not see where you can improve upon it any. It took us several years to get adjusted to the present existing law, to get it interpreted, to get it running right. Now, if we have an amendment that will further complicate it there will be a further mix up for two or three years and without any necessity.

I can not see where this bill would promote or increase safety at all, and I am looking at it from a broad and clear standpoint. I have had 28 years' experience in the railroad business. I have served as a lever man, a trainman, a telegraph operator, station agent, train dispatcher, train master, and superintendent. I have been a superintendent 13 years, 8 years in charge of my present territory. This territory is the heaviest traffic division on the North Western system, approximately 400 trains per day. We have all of the working conditions that could possibly come up under this proposed bill, and I can truthfully say that I do not believe it would promote safety at all beyond the present law or beyond the basis under which we are working.

There is one effect we have, and that would be to enforce the employment of a great many additional men at stations where they are not necessary—where there is no more real use for them than there is for the fifth wheel on a wagon. And that refers particularly to one-man stations. Another gentleman, Mr. Sears, I believe, will explain the conditions at such stations.

If we needed those additional men I know that the road that I am working for would put them on, law or no law, because we are one of the leaders in "safety first." and we are more interested in the matter of safety to the public and safety to our own men and property and reputation than a lot of men that are interested in this kind of legislation. We don't wait to be legislated into safety.

Mr. HAMILTON. Are the employees demanding this change?

Mr. DAILEY. Not on our railroad, no, sir; not that I know of. I don't think they are very much interested in it.

Mr. HAMILTON. You know that they are demanding it elsewhere, do you not?

Mr. DAILEY. I do not know it. I know this—that our men are pretty well satisfied, and they are pretty well treated. We have 101 offices and stations in my territory that communicate with headquarters. Of those 101, 50 are continuous stations—we mean by that continuous service, men work eight hours each. That is practically 50 per cent. We have 10 that are 18-hour offices; we have 41 that are 12-hour offices.

We do not work the full 13 hours that we could work under the law. We have a contract providing for the hours of labor based on the 9 and 12 hour basis, to which we adhere, but at these 12-hour offices we are privileged under contract, under schedule, under the law, to call men back once, provided we do not do it after 9 o'clock p. m., and further provided, of course, that they will be paid 50 cents for it.

I do not know of anything further to say, gentlemen, as two other gentlemen will handle other features of this bill, unless you wish to ask me questions.

The CHAIRMAN. Does any member of the committee wish to ask any questions?

Mr. DAILEY. I might make one more remark. This employment of additional men means a good deal. I do not believe we could get the number of operators necessary to meet the provisions of this law on the North Western system inside of a year, unless we went to work and trained them up and educated them, went out and got them somewhere. I believe that. I can not say how many it would take.

Another thing, the money that this would entail, the expenditure, could be better and more wisely applied in the ways of double-tracking, automatic signals, steel coaches and things of that kind, that would do some real good and provide real safety, rather than putting on additional men that are not needed and are not necessary—just a useless waste of time and money.

Mr. HAMILTON. Is this particular work so nerve-trying in these towers and other places, that are specified in this bill, as to physically command this eight-hour service, or could it be served by nine hours?

Mr. DAILEY. No, sir; can be served safely and well by nine hours.

Mr. HAMILTON. You say you were a train dispatcher?

Mr. DAILEY. Yes, sir.

Mr. HAMILTON. Did you ever work in a tower?

Mr. DAILEY. Yes, sir.

Mr. HAMILTON. What was your personal experience in that line?

Mr. DAILEY. My personal experience was this—that the principal strain and hard work centered upon the train dispatcher who does this planning and thinking and directing, and on a busy division, upon the conductor and engineer, who are running a train over it, and of the three the operator has the less strain generally and has more free time on his hands.

Mr. HAMILTON. Less than the conductor of the train and less than the dispatcher?

Mr. DAILEY. I think so.

Mr. HAMILTON. I grant you that it is true of the dispatcher, but I know something about the conductor. I was a conductor once myself, so I do not quite agree with you on that.

Mr. FAULKNER. How about the telephone man? Is his work different from the Morse telegrapher?

Mr. DAILEY. The use of the telephone is a great improvement and a benefit and acts in the same way as to facilitation of business and improving safety conditions that double tracking and automatic signals have done. We operate my division entirely by telephone as far as train dispatching is concerned. The use of the telephone has not only facilitated the movement of trains over the division, but has made dispatchers' and operators' work easier and reduced the so-called strain on the telegraph operator a whole lot. The point is this. Before the telephone was installed a man had to hang around his office and keep within ear shot of his instrument, which called with a little metallic clicking, as you all know. Now if he is not wanted he can go out in the freight room or out on the platform, or go where he pleases if he keeps within 100 or 150 feet of his office, and the bell will call him back when wanted.

Another reason, the understanding and operation is better over the telephone in that it is not mechanical. It is talked to him direct; it is more direct and personal.

Mr. FAULKNER. How do they verify messages?

Mr. DAILEY. They repeat them back. If a train dispatcher sends an order to an operator or conductor or anybody else, he speaks and spells out letter for letter the numbers of the trains and names of the towns and stations in the order. For instance, "Number one—o-n-e—will meet number two—t-w-o—at Racine—R-a-c-i-n-e." When the dispatcher is sending the order out he writes it down in his book as he speaks it, and when the operator repeats it back, he underscores it word for word, and he has a complete record. We use the same forms, the same methods, and the same everything as we did with the telegraph, with this single exception, that words are spoken instead of worked out mechanically. Now that fact, the use of the phone allows an agent or operator to clear up his work very much quicker. He disposes of it quickly; he has more time at his disposal, which, in my opinion, should go a great way toward reducing the strain that you mention, which is largely imaginary.

Mr. CULLOP. This is a very important work connected with the railroad business, is it not?

Mr. DAILEY. Yes, sir.

Mr. CULLOP. The life of every traveler and all the property is involved in the performance of this duty, is it not?

Mr. DAILEY. I do not quite agree with you that it is all involved or centered around the telegraph operator; no, sir.

Mr. CULLOP. The man who transmits the orders for the operation of the trains performs the most important duty connected with the railroad service, does he not?

Mr. DAILEY. Yes, sir; that is true in that particular kind of work, and that man is the train dispatcher, not the station operator.

Mr. CULLOP. Does not the operator repeat the messages and take them?

Mr. DAILEY. Yes, sir.

Mr. CULLOP. In the operation of every train that passes by their offices?

Mr. DAILEY. No, sir; we have offices that do not handle a train order once a month.

Mr. CULLOP. That is rare, is it not?

Mr. DAILEY. No, sir; that is the general practice. It would not be good railroading to stop every train at every station to get orders. They wouldn't get anywhere—would all be late.

Mr. CULLOP. Oh, no; it would not necessarily stop every train, would it? The orders are transmitted through the offices, and many of them require the trains to be stopped at the different stations. Now, it is very essential that those orders be transmitted correctly, is it not?

Mr. DAILEY. To the operator; yes.

Mr. CULLOP. Yes.

Mr. DAILEY. Yes, sir; I will say that is essential.

Mr. CULLOP. You do not think it is essential that he fully understand the order and take it correctly wherever he is required to transmit one, do you?

Mr. DAILEY. Yes; the operator should receive it correctly. But what I want to say is that it is not entirely essential that he should do it all. The conductor could receive an order or instructions telephonically just as well as the operator and carry it out just as well, because he would get it at first hand and is just as reliable and competent to do it.

Mr. CULLOP. But where the operator is required to receive and deliver it to the engineer, concerning the movement of trains. Now, the train dispatcher is the most trying service of any position in the entire railroad business, is it not?

Mr. DAILEY. Yes, sir; in the telegraph end of it it probably is.

Mr. CULLOP. The truth is, there is not any man who can work at it very long, is there?

Mr. DAILEY. I worked at it seven years when I was younger. Never hurt me; my hat is still in the ring. We have a man in my office that has worked at it 23 years.

Mr. CULLOP. On a large system?

Mr. DAILEY. The largest division on the Northwestern Railroad; yes, sir.

Mr. CULLOP. He is a superintendent, then, is he not?

Mr. DAILEY. No, sir; still a dispatcher. We have another man that has worked 30 years.

Mr. CULLOP. Have you any that have worked any longer?

Mr. DAILEY. No; not that I know of.

I wish to make myself clear about one thing. The train dispatchers, in handling trains, do not send their orders and instructions governing the movement of trains to all these offices. Take my division, for instance; there are 11 or 12 principal offices to which we send the orders and instructions because we do not want the trains stopped and delayed at all stations. It would not be good business to stop trains at all stations to receive orders and instructions. The orders and instructions governing the movement of trains in my territory are handled at 11 or 12 principal points, the larger cities where trains are scheduled to stop anyhow. Now, at those large offices the average train orders handled per day at the three largest ones is 25. That is about one per hour. At the other eight or nine heavy offices it runs about 12 to 15. At many of our stations we do not handle orders once a month. We have some stations that have not taken an order this year.

The CHAIRMAN. Your conductors and engineers have standing instructions as to where they will stop to receive orders, have they not?

Mr. DAILEY. Yes, sir; and they know where we have telephones so arranged that they can get them if there is no operator on duty.

The CHAIRMAN. I want to know if you have such a system, understood by them, that they know where to stop to get orders, either from agents or by their own procurement, and that they do not dare pass on until they get such orders.

Mr. DAILEY. They know what stations are train-order offices and which are not. They also know which stations they can help themselves by telephone should they so desire.

The CHAIRMAN. Is it understood by them that at a station where there is an agent they do not dare leave until he tells them what the orders are, if any?

Mr. DAILEY. At certain stations; yes, sir.

The CHAIRMAN. And if they are to secure their own orders by telephone, that they do not dare pass until they have secured such orders?

Mr. DAILEY. Yes, sir; at certain places they can go without a train order by using a release, or clearance, as we call it.

Mr. HAMILTON. When a conductor starts out with a train he starts out with orders for the conduct of that train, does he not?

Mr. DAILEY. They do not all have orders on a double track; no, sir. On a single track they would have orders.

Mr. HAMILTON. As a general thing what is the custom, to make it clear to some of us who do not know anything about the business, of the operation of trains?

Mr. DAILEY. It is this: On a double track district trains start out of their terminal and get what we term a clearance, which means there are not any orders for them—there are not any further instructions for them.

Mr. HAMILTON. He is starting now with his train?

Mr. DAILEY. Yes, sir.

Mr. HAMILTON. What does he start with? Does he have a clearance?

Mr. DAILEY. Yes, sir.

Mr. R. W. PARKER. How far?

Mr. DAILEY. To the end of his run. He runs on his regular printed schedule. We have a time-table printed showing each train

number, where it runs, and the time due at every station, and every man has one of these schedules. Different trains have different rights, some are what we call first-class trains, some second-class trains, some extras. One looks out for the other according to their different rights as shown on these schedules.

The CHAIRMAN. These extras, I presume, are not the regular schedule trains?

Mr. DAILEY. No; on double track we start an extra out in the same general way; he operates by special instruction and by his time-table, moves with the direction of traffic on one certain track, clearing superior trains as shown on the time-table. He is not allowed to leave his regular running track, to cross over onto the other running track, unless he has special authority to do so from the train dispatcher. On a single track he operates by train orders, he is given train orders directing and controlling his movements.

Mr. HAMILTON. It is provided then at the outset, when these trains start out, that there shall be no interference of trains. If any emergency arises, what happens, what is done then?

Mr. DAILEY. Well, of course if any emergency arises, so far as the conductor is concerned, he would stand still until he could work his way out either by schedule rights or special instructions.

Mr. HAMILTON. Suppose the train were unable to keep up its schedule and through its inability to keep up its schedule it interferes with the schedules of other trains. How do your regulate that?

Mr. DAILEY. The train dispatcher steps in and regulates that and all emergencies by issuing orders to the trainmen concerned to meet and pass at certain stations, or whatever may be necessary. Those trains—all trains—are watched, governed, and controlled by the train dispatcher, who keeps a record of each one on a large train sheet.

Mr. CULLOP. Do not the operators have to check those orders over the instrument and transmit them to the conductor or those in charge of the train either by telephone or telegraph?

Mr. DAILEY. Yes; at stations that handle orders the operators take them from the dispatchers, write them down, and hand them to the conductor or engineer.

Mr. CULLOP. Then it is very important that you have a man who is not only physically but mentally fresh for the purpose of handling that part of the service, is it not?

Mr. DAILEY. Yes; at those points that I mentioned where trains receive their orders we have three men now.

Mr. CULLOP. Everywhere?

Mr. DAILEY. We have 50 that have three men.

Mr. CULLOP. What road is that?

Mr. DAILEY. The North Western.

Mr. CULLOP. Does that apply to all the railroads?

Mr. DAILEY. Oh, no, just my territory alone.

Mr. CULLOP. You are speaking of them with reference to the road with which you are connected, I mean?

Mr. DAILEY. Yes.

Mr. FAULKNER. Typical.

Mr. DAILEY. It is typical. My division is typical of the entire system, and I presume we are typical of all the standard systems.

Mr. ESCH. The Northwestern has an automatic block system on part of its line, has it not?

Mr. DAILEY. Yes.

Mr. ESCH. Where you use the automatic block system do you not dispense with a great deal of your train-order business?

Mr. DAILEY. With the automatic-signal system?

Mr. ESCH. Yes.

Mr. DAILEY. Yes. Perhaps you do not always need train orders, though.

Mr. ESCH. So that by increasing the automatic block signals among the carriers of this country it will tend to eliminate the necessity of train orders by the dispatchers?

Mr. DAILEY. I think the improvements, such as double tracking and automatic signals, introduction of telephones and things of that kind, has all done a great deal to facilitate train movements, yes, sir; and avoiding the necessity of stopping trains so often for orders and instructions.

Mr. ESCH. I notice this bill makes a change in the existing law by saying that "no employee who, by the use of the telegraph or telephone or other electrical device," etc. What other electrical device is there—wireless?

Mr. DAILEY. I presume that would be included if it came along, but we do not use it.

Mr. ESCH. Does the Delaware & Lackawanna use it?

Mr. DAILEY. I could not say, sir. The way it appears to me this proposed bill would also include lever men, towermen, signal maintainers, and signal helpers working around towers, or anyone who communicated with towers to participate in the movement of a train or control the movement.

Mr. ESCH. I was just curious to know what was meant by "or other electrical device?"

Mr. DAILEY. I do not know.

Mr. ESCH. Unless it be wireless. I knew that the Delaware & Lackawanna had made some very interesting experiments in the way of wireless.

Mr. DAILEY. We have not used it. I do not know anything about it.

The CHAIRMAN. Were you here during the Sixty-second Congress when this bill was before this committee?

Mr. DAILEY. I was here in 1914; yes, sir.

The CHAIRMAN. That bill was considered by a subcommittee and reported to the full committee, and the full committee reported it to the House, and the carriers complained that it was inadvertent; that they had not had a fair hearing. The committee met and had a rehearing. Did not the two parties on the two sides then agree on the terms of this bill?

Mr. DAILEY. I did not agree to it, because I had the same objections to it then that I have now. I do not think it is practicable, and I think that there are impossibilities in there that you can not meet.

The CHAIRMAN. The bill was never passed by the House, but this committee, on the complaint of the carriers, met again and considered it, and heard further testimony, and my impression was that there was some sort of an understanding about it. What was there about that, Mr. Parham? Was there any understanding about it the second time we heard it?

Mr. PARHAM. There was no understanding, Mr. Chairman, but this bill has been framed to meet the objections that were then made.

Mr. FAULKNER. Some of the objections; not the main objection, which is the eight-hour feature.

Mr. HAMILTON. The witness says that this bill does not meet these objections.

Mr. DAILEY. It does not. As far as leeway is concerned, at this minute the only way you can meet that objection is by leaving them alone at nine hours. That gives you an opportunity at transfer points where you have three men of transferring properly, intelligently, and safely to the other fellow, and I do not know how you are going to work it out in any other way.

Mr. R. W. PARKER. They work sometimes from 8 o'clock in the morning to 4 in the afternoon, or from 4 in the afternoon to 12 o'clock at night, and I suppose when they shift them at the end of week they sometimes change with one another, so that some weeks they are on night service and some weeks day service?

Mr. DAILEY. No, sir.

Mr. R. W. PARKER. I have seen that done.

Mr. DAILEY. We do not do that on our line. We keep them on 8 hours, regular assignments.

Mr. R. W. PARKER. So there is no shifting to be done at the end of the week.

Mr. DAILEY. No; we do not change them weekly or monthly.

The CHAIRMAN. Your point is that you make the shift at the end of 8 hours, and then allow some minutes for making the shift that would stretch the 24-hour day too much, there would not be room enough to get any changes on the reshifts?

Mr. DAILEY. You can only get three exact periods of 8 hours each in 24 hours. If I am relieving a man and I show up 5 minutes late, he is working excess hours, and causing a violation of the law for which the company is not in any way responsible; the man himself is responsible.

The CHAIRMAN. You had better transfer his guilt for losing the 10 minutes to you.

Mr. DAILEY. We are the ones that have to stand for it.

The CHAIRMAN. Just transfer it. The man who has detained you, let him come sooner the next time.

Mr. DAILEY. I think it is just and fair that a man that causes us to violate the law and we can't help it should stand his share of it rather than have the railroads stand for all violations of the law. I do not think that is fair.

The CHAIRMAN. I mean, naming yourself as the second man, coming five minutes late. It seems to me you would be the guilty man then.

Mr. DAILEY. Yes; that was the point I was trying to make. I would be the guilty fellow.

The CHAIRMAN. I think you men ought to be punished and not the corporation.

Mr. DAILEY. In that kind of a case the men at fault ought to be made to stand for it instead of the officers of the railroad company.

Mr. CULLOP. You are working under the eight-hour system on your road now?

Mr. DAILEY. We are at the continuous-service offices and the present nine-hour basis would govern all these various things that we are discussing and give us a chance to do something to help and protect ourselves, and not be forced into an impossible and helpless situation that would cause us to continually violate the law. I do not know how you are going to work it out in any other way. The present law is ample.

STATEMENT OF MR. T. H. SEARS, GENERAL SUPERINTENDENT ATCHISON, TOPEKA & SANTA FE RAILWAY, AMARILLO, TEX.

Mr. SEARS. Mr. Chairman and gentlemen of the committee, I shall only speak of that portion of the proposed bill, or change from the present law rather, which at present provides for or permits the working of 13 hours, and in case of emergencies where a man can work four hours during the week. The proposed bill reduces the hours of service to eight continuous hours, except where but two passenger trains run the hours can be extended to 10. This applies largely to branch lines where the spread of the passenger service may be such that the operator will be compelled to be on duty a longer period than the new bill provides for. In other words, if his passenger train ran in one direction at 7 a. m., and in the opposite direction not until 7 o'clock in the evening, he would not be permitted to remain on duty, no matter whether he has had any work to do during the day or not. Many of the stations are small, some larger, and possibly the earnings may be very small. In some States we are required to keep the stations open a certain length of time before the trains are due, and some after. That means additional men will be required when possibly the man has not done to exceed two hours actual work during the day, although he has been on duty. In some instances the telegraph service may be maintained as an accommodation to the community, where possibly the railroad may be able to dispense with it, and yet, under the terms of the bill, if we continue that service it will require an additional operator. There are some points on main-line territory where one-man stations are operated during the day where the telegraph service may not be absolutely necessary for the operation of the trains, but is partially for the convenience of the railroad and the public. It may be necessary to dispense with the telegraph service at some of these points or go to the expense of additional force, which the circumstances will not warrant. This is all that I have to say.

Mr. CULLOP. I would like to ask you, do you have the eight-hour employment on your road?

Mr. SEARS. Very largely, yes, sir; where it is practical to do so, and we have a good many stations where we work the eight-hour tricks.

Mr. CULLOP. You find it practical, do you not?

Mr. SEARS. We do where we have the double track with automatic signals, etc. There is no transfer work to do.

Mr. FAULKNER. How about the desert conditions along the road?

Mr. SEARS. At a number of our stations we provide a home for the operator and agent within the depot, with water, lights, etc.

They are not large enough to provide for the full set of operators, although we do have cases where the agent, his wife, and children live at the station or else a portion of the office force. It is difficult in some portions of this territory to provide living quarters for the employees; however, at such points we, as a rule, maintain the continuous service, but there are other points where we have the one-man station and where freight is hauled to or from the station for a distance varying from 5 to 50 or more miles from the station. These teamsters come in at all times of the 24 hours, and under the terms of the proposed bill the agent would not be permitted, after his 8 or 10 hours had expired, to assist these teamsters in taking their freight from the warehouse. There are many illustrations of this character indicating the difficulty in making an arbitrary rule.

Mr. DEWALT. Mr. Sears, would what you have complained of in regard to these branch roads and the service at these offices be cured by this amendment on page 3, lines 5 and 6: "On such branch lines the hours of service may be extended to 10 hours actual service in the office in each 24-hour periods"?

Mr. SEARS. Provided that there are only two passenger trains a day?

Mr. DEWALT. Yes; provided there are only two passenger trains a day?

Mr. SEARS. That is where your trouble is on the branch tracks that you do not have the two trains a day.

Mr. DEWALT. I see your difficulty. You have your stations where it is unnecessary very frequently to have men in charge of the station. I know that is a fact. There are a good many stations where the men do not have to be there.

Mr. SEARS. Yes, sir.

Mr. DEWALT. And you have your two trains a day, that run at 7 o'clock in the morning and come back at 7 in the night. There you have your 12 hours. There the men will not be permitted to work at this station because the 10-hour limit would have expired before the 12 hours came. Wouldn't that be cured if you said in that line that the 10 hours shall be 10 hours actual service in the office?

The CHAIRMAN. That 10 hours may be broken in two in order to serve your purpose.

Mr. FAULKNER. You can not do that under the other provisions.

The CHAIRMAN. The amendment ought to state affirmatively that it breaks it in two.

Mr. SEARS. The law provides for continuous service. Furthermore, you must understand we are paying for that operator while he is going to lunch, so that we are only getting nine hours' service out of him.

Mr. DEWALT. But that should not be considered in a great matter like this. That is splitting hairs. I am just inquiring as to whether that would be practicable; could be worked out.

Mr. SEARS. That is, if you were allowed to split the trick?

Mr. DEWALT. Yes.

Mr. SEARS. That is the way it is now. That is the objection which has been made to this law.

The CHAIRMAN. In the case of your trains running so far apart that the time limit would not reach from one to the other, why can you

not improve that by adopting the suggestion of providing affirmatively in those cases that the time be broken in two, by stating a positive time in the morning and a positive time in the evening?

Mr. SEARS. The law says so.

The CHAIRMAN. I am talking about amending the law.

Mr. SEARS. There is no doubt that would help us out considerably.

Mr. DEWALT. That is what I wanted to know.

Mr. SEARS. I beg your pardon.

Mr. DEWALT. I think that will be cured by putting in 10 hours full service in the office. That would cure the continuous-service provision so far as the office is concerned. I do not know whether it would meet the views of all the railroad men, but I am asking your views.

Mr. SEARS. In many cases that would take care of it.

Mr. DEWALT. In many cases?

Mr. SEARS. Yes, sir.

STATEMENT OF MR. JOHN W. MEREDITH, GENERAL SUPERINTENDENT, CENTRAL RAILROAD OF NEW JERSEY, JERSEY CITY, N. J.

Mr. MEREDITH. Mr. Chairman and gentlemen, I notice in the bill that provision is made for appliance requirements for the use of electric current. Now, perhaps a word in regard to the block signal and its development by the use of the telephone may be in order. In the early days of block signaling the permissive signal was largely used—that is, the signal was given to permit a train to enter a block which was already occupied by another train. This was a manual blocking. The practice was objectionable, because accidents sometimes occurred. The manual blocks were far apart. The better practice was to make actual blocking. The result has been that the use of the telephone has been applied in this way, but there may be one or more sidings between the blocks. With the growth of industries these sidings have increased in number. When the train can get into clear, it does so, and the conductor reports by telephone to the nearest block operator that it is clear. That leaves the track clear for another train to proceed at full speed. Before the conductor can leave that siding he must, by the use of the same telephone, call up the block operator and ask for permission to do so. Otherwise he will block the main track and possibly foul the incoming train. In that manner telephones have come to be very largely used where manual blocking is applied, and they are very beneficial.

Under the terms of this bill it would prohibit the conductor asking the operator for instructions or reporting that he was in clear of the main track without coming under the eight-hour clause. Inasmuch as the rest of his crew are permitted to be on duty 16 hours a day it is entirely impracticable to limit the conductor to 8 hours. Hence it follows that at these intermediate stations—and there are many thousands of them—it would be necessary to employ one, two, or three men telephone operators to do the work that the conductor now does, and perhaps on an average of not to exceed 5 or 10 minutes work a day. It seems unreasonable to draw a law so drastic as to make a provision of that kind.

The CHAIRMAN. If you will haul an extra conductor along on the train so as to have him ready at the end of the eight hours, he would be on duty while he is riding, would he not?

Mr. MEREDITH. I think the Interstate Commerce Commission decided that when he is riding along on the train as a passenger he is not on duty.

The CHAIRMAN. He would be riding under your requirements. There would be that distinction.

Mr. MEREDITH. He would then be on duty and you might just as well use the regular train conductor. Both would be under identically the same conditions.

This bill by limiting the unrestricted use of the telephone in cases of "collisions, derailments, slides, washouts, or personal injuries" forces the railroads to do one or two things:

(*a*) Abandon these facilities and return to the old method, or

(*b*) Place a telephone operator permanently on duty with but little to do because only a comparatively small number of trains stop at these intermediate points to do work.

That is the only provision which is made which permits any conductor or member of the crew to use the telephone without coming under the provisions of the eight-hour law, which as I have explained, is impracticable. It does not seem possible to me that the slight use that the train men can make of this telephone service, the use of the electric current, can result in danger, because I consider that the conductor and engineer so far as the safety of life and limb are concerned, are under far greater mental strain than any possible telephone or telephone operator can be.

The question was raised a moment ago by one of the gentlemen present, and I would like to say a word right on that point now. As an old-time telegraph operator and train dispatcher, who has put in 11 years at that service, I can safely say that I can not see with all that experience where the operator has got such a nerve-racking job. Take for a moment the case of handling a train order. The dispatcher calls up the operator and before that order is sent he requires the operator to tell him that he had his stop signal displayed. That stop signal is a signal which is placed in view of the enginemen, usually a semiphore signal, to stop the train to which the order is to be addressed. Before the operator can receive the order, he must have that signal displayed in a stop position. Before the dispatcher can send the order to him he must say back to the dispatcher that the stop signal is thus displayed. The receiving of the orders, usually in stated forms, is not any different than the receiving of any other telegraph message, is no more nerve-racking than the duty you gentlemen are performing in sitting there and listening to me. I know what I am talking about.

The CHAIRMAN. It does not apply to you, but sometimes we have hearings that are nerve racking.

Mr. MEREDITH. My nerves may be racking now, but you gentlemen do not seem to be nervous.

Mr. CULLOP. I had always understood that it was a most exacting duty.

Mr. MEREDITH. I was going to finish. After the order has been received by the operator, he repeats it to the dispatcher. That is done to check any possible errors, relieving him to a certain extent

of nerve racking and loss of energy, because the very fact that he has a good check by checking back to the dispatcher relieves him of the nerve tension he would otherwise be under by just copying it once. Now comes the important part of the operator's duty. He must deliver that order to the correct conductor and trainmen. There may be two or three trains in the yard or approaching. He must select the proper one to whom to deliver. If he selects the wrong one, some trouble may ensue. On the other hand, he has the check of the man to whom he delivers that order to guard against errors. They must read it. If it does not belong to their train, they will say, "Here, Johnnie, your order belongs to this other train, not mine." There is the one important duty to the operator, and it is important. As far as taking the order is concerned, and repeating it, there is nothing nerve racking about it.

The CHAIRMAN. As I understand the idea of these proposed amendments, admitting that the continuous service of telephone and telegraph operators is nerve racking and disqualifies them after a certain length of time, does that reason apply to a conductor who has not been operating a telephone or a telegraph but simply looking after his train, when he stops and telephones one time?

Mr. MEREDITH. If he stopped and telephoned one time it would be proportionately less nerve racking than if he telephoned 20 times, but we have old operators, old men who have worked for years and years as operators, and I can not see for the life of me where their nerves are racked to pieces.

The CHAIRMAN. Admitting that it is nerve racking, the conductor who has simply been operating his train for eight hours certainly would not have his nerves severely shocked by telephoning one time, so the reason for applying this to him does not appear to be rational at all?

Mr. MEREDITH. Absolutely not. The conductor and enginemen do have mental strain, to be perfectly fair to both sides. They have no signal which they can throw up there in their faces to tell them when they are approaching the meeting place. They have got to remember the order which they have got in their pocket. They must read it and memorize it. They must remember the meeting points or passing points. They have nothing to guide them except their memory and they must charge their memory with this important function, and if they forget accidents sometimes result.

Mr. HAMILTON. They have a copy of the order in their pocket?

Mr. MEREDITH. They have it in their pocket, but they can not hold it up before them all the time.

Mr. HAMILTON. The engineer knows where he is 10 miles before the meeting point, does he not?

Mr. MEREDITH. I know that, but your operator when he is receiving an order puts up a signal "Stop." He does not need to concern himself particularly about watching for that train. The signal protects him. If the engineer goes by that train that is the engineer's fault. The records show that is very unusual. But they have no signal to tell them they are approaching this meeting point. But occasionally they overlook a signal.

Mr. ESCH. Do not the conductor and engineer have to repeat the orders in the presence of each other?

Mr. MEREDITH. Yes, sir.

Mr. ESCH. So that there are generally two of them that know the orders?

Mr. MEREDITH. Yes, sir.

Mr. ESCH. But does not the trouble come in taking a siding to allow a first section of a train to go by? There are two, three, or four sections, and they fail to keep count of the number of sections, and they get on the main track before the last section passes by?

Mr. MEREDITH. That is one trouble. But you also have occasions when they forget the meeting point, and go beyond it. Those cases cause trouble as well. The point I am trying to emphasize is that the conductor and engineer must depend on memory to carry out every important part of the process of train movement. The operator has the adjunct of a signal which he places at "Stop" before he receives the order at all, and that signal relieves him of the mental strain of carrying in mind that he has got to stop this train. He does it by mechanical means.

Mr. ESCH. Once he has given the orders his responsibility ceases?

Mr. MEREDITH. Yes.

The CHAIRMAN. Their depending on memory constitutes the chief reason for keeping awake, because the sleeping man is not supposed to have a good memory.

Mr. MEREDITH. To my mind the man who has to remember these things and carry them out from memory is under a greater responsibility, a greater strain, than the man who has the adjunct of a physical signal to help him in doing his work.

Mr. CULLOP. But the man who is to use the signal has to get the order from some place, does he not?

Mr. MEREDITH. Yes.

Mr. CULLOP. Then his condition is important as to whether he will be able to receive it correctly and carry it out?

Mr. MEREDITH. It is a fact—and I do not mean to reflect for one minute on the good, conscientious men we have among our operators and the good work they are doing. I am simply stating facts in their relative value one to the other.

Mr. CULLOP. I am asking you the question as to whether you need a man in possession of his faculties for carrying out that important work, or can you get along with one who has exhausted his faculties in carrying out the work?

Mr. MEREDITH. You need a man who is in possession of his faculties for all classes of railroad work; that included.

Mr. CULLOP. Then if that man has been kept in the service until he is worn out and exhausted he is not capable of performing that particular and important service that is required in his department, is he?

Mr. MEREDITH. He is not, or any other service. And in my 30 years' experience I have never seen an operator in that condition.

There is one further matter I want to point out in that connection. I have tried to impress you gentlemen that the conductor and enginemen's duties are just as nerve-racking and just as exacting as are the duties of the operator, and I conscientiously believe it because I have been in connection with them for 30 years as an operator and train dispatcher and agent, and, of course, coming in constant contact with them. Your law permits these men to be on duty 16 hours in a 24-hour period, and with their fully equal and to my mind greater

responsibilities, if you like, nerve racking—I do not like the word because it is not a fact—but nerve-straining duties—if it is fair and right and reasonable that these men with their greater responsibility should be allowed to work 16 hours it is not fair and necessary to restrict the telegraph operator to one-half that period. And if it is not so in the case of the operator it is still less so in the case of the towerman at unimportant places or your switchman who is now allowed to work 16 hours throwing switches. He has less important duties to perform than the brakeman, who is permitted to work 16 hours, and yet he must under the provisions of this act be cut to 8. It does not seem reasonable to a man who has had practical experience at the game.

In comparing this proposed bill with the original law that is now in effect I note it has in it the emergency clause which makes the exceptions of this bill apply only to collisions, derailments, slides, washouts, etc. The evident purpose of the provision is to permit in those cases the trainmen, the conductor, the engineman, or the brakeman to use the telephone or telegraph without the company incurring the penalty of this law. The objection I see to this feature is that it is not humanly possible to forsee and provide a specific provision for all those conditions that might arise which would make it essential to use the telephone or telegraph, as in the five cases cited.

Take, for instance, the case of a bridge on fire. It is very important that the trainmen get word to the train dispatcher in case of a bridge on fire. It is just as important for them to get word to the dispatcher in a case of that kind as it is in a case of collision or derailment. Or take the case of a breakdown of an engine. That is something that no man can foresee, and it can not be guarded against. Take, for instance, the breaking of a crankpin, which usually breaks inside the hub. You can not tell in advance that that is going to happen, and you can not provide against it. It is possible to run those contingencies up into hundreds. But no mention is made in the bill of these various contingencies which might be met with.

What is needed here is to provide that these emergency cases, which may happen at any time, should be treated as emergencies, and the law should not apply. In other words, the present arrangement should be continued.

Mr. DEWALT. How could you cure that by an amendment?

Mr. MEREDITH. Let the present language stand.

Mr. DEWALT. You would say there, after the words "injuries or other emergencies," "necessary use for the safe movement of the trains." I am reading from line 3 on page 3 of the bill. Do you think that would cure that?

Mr. MEREDITH. I think the best way to cure that would be to leave it out altogether.

Mr. ESCH. The original act says that in a case of an emergency it does not attempt to specify, and when you go into that you have to name them all or leave them all out.

Mr. MEREDITH. You would get into thousands of names if you undertook to take them all in. My suggestion is to leave it as it is in the present act. That would cover the ground.

Now, Mr. Chairman, I would like to say just one word in reference to the penalty feature. The act provides a minimum penalty of $100 for all violations. It would seem on first view that that is

proper, the same as in the case of other safety appliance acts. But the cases are not identical and not even comparable. In the case of the safety appliance act you have physical conditions to overcome, and by careful inspection you can usually guard against any imposition of fine. But in the case of this act it is entirely different. One of the gentlemen here called particular attention to the fact of the overlapping due to the fact that only eight hours are allowed when the relief operator is 5 or 10 minutes late. The relief operator frequently can not live at the place where his duty is performed, and he must use the trolley cars or the trains to reach his post of duty. It may be that on account of conditions over which he has no control he may be 5 or 10 minutes late in arriving at his post of duty. That is a violation of law. Technically, of course, that is true, whereas if you let the act remain as it is now, that matter is entirely in the discretion of the court.

The CHAIRMAN. You do not want any minimum penalty?

Mr. MEREDITH. No, because such a case as that described is merely a technical violation which the carrier can not avoid, and it is inherently unfair to fine a carrier for a thing which it can not help.

The CHAIRMAN. You want to leave that to the discretion of the court?

Mr. MEREDITH. Yes. If the carrier habitually and carelessly violates the act, then let the court make the penalty punitive. In a case where it is merely a technical violation which can not be controlled, it seems to me the court should have discretionary power.

The CHAIRMAN. I would be in favor of discharging him without any fine, if that happened outside of his eight hours of duty.

Mr. MEREDITH. That is the point. The conductor, for instance, can not be fined, but the carrier can. You do not make any penalty against the conductor, and I am not asking for that.

The CHAIRMAN. If there is not any person to blame, I do not see what particular advantage it is to lessen the profits of the corporation a little bit?

Mr. DEWALT. What would you think of a provision in the act fining the conductor, and in case it can not be recovered from him, then provide that it can be recovered from the company? There are such statutes.

Mr. MEREDITH. I do not want to indulge in any levity, but it does seem to me that that would be beating the devil around the stump.

Mr. DEWALT. That is one of the provisions of the grade-crossing act. It is provided that if you can not collect the fine from the conductor, you can collect it from the carrier.

Mr. MEREDITH. I think this is a matter in which the court should have discretionary power, and not be bound by any hard and fast provision, because in one case there might be an entire dereliction of duty on the part of the carrier, and in the other case there might be nobody to blame. The only way you can secure exact justice in reference to that matter is to leave it in the power of the court to say whether there is any punishment necessary; that is, whether there should be punishment in one case, and in the other case no punishment at all.

Mr. PARKER of New York. The statement was made by somebody here that there were 46 accidents in 1915. I do not know whether you agree with that or not. I wish that both the railroad men and

the railroad attorneys would furnish the committee data as to where and how those 46 accidents occurred. It can not be a very laborious task to do that, and it will give us a basis so that we can find where the people were killed, and how.

The CHAIRMAN. In revising their remarks the witnesses who have made any statements of that kind should be very explicit.

Mr. PARKER of New York. I would like the gentlemen on both sides to furnish very specific statements in regard to this particular point.

(Thereupon, at 12.55 o'clock p. m., the committee adjourned to meet to-morrow, Friday, April 28, 1916, at 10 o'clock a. m.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Friday, April 28, 1916.

The committee met at 10 o'clock a. m., Hon. William C. Adamson (chairman) presiding.

STATEMENT OF J. KRUTTSCHNITT, CHAIRMAN OF THE EXECUTIVE COMMITTEE OF THE BOARD OF DIRECTORS OF THE SOUTHERN PACIFIC CO.

The CHAIRMAN. Give the committee your name, address, and occupation.

Mr. KRUTTSCHNITT. J. Kruttschnitt; address 165 Broadway, New York, and my position is chairman of the executive committee of the board of directors of the Southern Pacific Co.

The CHAIRMAN. You may proceed in your own way to discuss this bill.

Mr. KRUTTSCHNITT. Mr. Chairman, in reading this bill over carefully it seems to me to depart radically from almost every regulatory measure that has been so far adopted. Followed through all of its details it would, if enacted into law, practically take away from railroad officers, representatives of the shareholders, the management of their property. It seems to us to go far beyond regulation and to really prescribe management. It would take out of the hands of the officers all of the details about making rules and regulations for the running of trains, for the adoption of standards in the maintenance of their track, bridges, and other structures; it would lodge in the hands of an already overworked commission the preparation of designs and specifications for the building of equipment, and it even goes so far as to place in the hands of the commission the power to prescribe what supplies the railroads shall use. In other words, it goes into questions of management down to the most minute details and, as said before, much further than any other regulatory measure has ever attempted. The duty of performing all of these functions is to be thrown on what I think every one recognizes to be an already overworked Interstate Commerce Commission.

We understand that on Monday the House is to take up for consideration what is known as the Newlands resolution, providing for a joint congressional committee to study the entire question of railroad regulation as far as it has proceeded——

The CHAIRMAN (interposing). You have more favorable information on that subject than I have. I have not been assured of consideration of it on Monday.

Mr. KRUTTSCHNITT. My authority, of course, is press dispatches from Washington, and I may be in error about that, and perhaps instead of saying May 1, which is the date that appeared in the dispatch——

The CHAIRMAN (interposing). It is on the calendar, but it has been objected to twice already and may be objected to several more times.

Mr. KRUTTSCHNITT. Then I will change my language and say I understand that the Newlands resolution is under consideration.

The CHAIRMAN. It is pending.

Mr. KRUTTSCHNITT. Yes. And as I understand that resolution, it contemplates studying the entire question of regulation from the beginning up to date to determine what success it has met with; to also study whether there are any deficiencies, and if so, in what directions the laws may be amended and improved.

The CHAIRMAN. We expressly asked the railroad attorneys, when they were advocating that bill, if the pending bill passes would that joint resolution suspend or prevent consideration of safety-appliance acts, and they said not.

Mr. KRUTTSCHNITT. This, however, goes very much further than consideration of safety-appliance acts; very much further.

The CHAIRMAN. You have a right to a different opinion from them, anyway. You have a right to your own opinion as to the scope of that resolution.

Mr. KRUTTSCHNITT. The drift of my remarks, of course, as you understand, is to suggest to the committee whether it would not be better, as this is such a radical departure from everything that has ever been done before, to have the Newlands committee consider this, together with other questions of regulation.

One of the things to be put before them or proposed to put before them is the question of Government ownership. Really, after reading this bill through, it looks very much as if it provided for Government ownership and for delivery of the properties before providing payment for them. All initiative will be taken away from the owners of the property and placed in the hands of a Government commission; all questions not only of operation but, as I said, of the design of equipment and structures. Under existing conditions the revenues of the carriers are restricted and fixed by regulation. There are very few directions in which the officers of carriers can at the present time reduce expenses under the stress of industrial or financial storm. Very little is left to them except the modification of train service—I mean, to increase it or decrease it—and the study of standards of equipment, maintenance, and the purchase of supplies which will lead to economy. Now that control of expenses is to be taken away from them by this bill, and that is why I suggest and would earnestly urge that the entire question as to how far the management of the roads is to be taken over should be left to a committee of Congress.

Mr. ESCH. I suppose you have particular reference, Mr. Kruttschnitt, to section 9?

Mr. KRUTTSCHNITT. Yes; section 9 and the related sections, 8 and 10; really, the three go together. They are what might be

called the most radical sections of the bill. The other sections are less objectionable and do not go nearly so far.

Mr. ESCH. I think the purpose of introducing sections 8, 9, and 10 was owing to the vast increase of accidents due to derailments. The accidents from derailments amount to about half of the total accidents. Derailments have been catching up with accidents due to collision, so that now they are about equal, and these derailments were largely due to defective rails, roadbed, equipment, wheel flanges, etc., and the idea in putting those sections into this bill was to give such supervisory control over that matter as to lessen accidents from that source. I think that was the intent, at least, of putting in those sections.

Mr. KRUTTSCHNITT. So I assumed on first reading the bill, and I analyzed the causes of fatalities on the United States railroads for the fiscal year ending June 30, 1915, and find that the fatalities due to derailments caused by defects of roadway and defects of equipment total 97, which is 1.2 per cent of the fatalities occurring on the railroads of the United States.

Mr. ESCH. You include in that figure the fatalities of trespassers.

Mr. KRUTTSCHNITT. Yes; that is the grand total. I might say the total number of sins of the railroads published every year with scare headlines which unduly alarm the public and unduly alarm legislators. It is unfair to treat the figures in that way, yet that is the way the commission publishes them.

Mr. STEPHENS. There was a little confusion in the room when you made your statement in regard to those figures and I did not get just what that 1.2 per cent referred to.

Mr. KRUTTSCHNITT. That was the percentage of the total fatalities due to derailments caused by defects of roadway and equipment to the total number of fatalities charged up to the operation of train service on the railroads of the United States during the year ended June 30, 1915, by the Interstate Commerce Commission.

Mr. STEPHENS. One and two-tenths per cent of the total?

Mr. KRUTTSCHNITT. Yes.

Mr. SIMS. Those due directly to derailments?

Mr. KRUTTSCHNITT. Yes. That was in answer to the gentleman's explanation that the inspiring motive of the bill was the large increase in the number of derailments due to defects of equipment and track.

Mr. CULLOP. Section 8, to which you have referred, provides only for the Interstate Commerce Commission making investigation upon the application of the carrier.

Mr. KRUTTSCHNITT. Or on its own motion.

Mr. STEPHENS. Is that an objectionable provision to the railroad?

Mr. KRUTTSCHNITT. Not if that section stood by itself and if section 9 did not follow.

Mr. BARKLEY. That section would not have any force at all unless they could do something after the investigation was made, would it?

The CHAIRMAN. You say you construe those sections as taking away all initiative from the railroads?

Mr. KRUTTSCHNITT. Section 9?

The CHAIRMAN. Those three sections.

Mr. KRUTTSCHNITT. Absolutely.

The CHAIRMAN. It seems to me they contemplate an examination and review of something the railroads already initiate, and then they

require them to correct it. As I understand it, if somebody complains or they discover anything wrong, they make an examination of the conditions already initiated by the railroad, and if they find conditions wrong, they require correction of them exactly in the same mode that is pursued upon objection to rates and the correction of them.

Mr. KRUTTSCHNITT. The question of fixing the rates is purely a question of regulation and is inherent to the method according to which railroads are chartered. In other words, the shareholders who put up their money to furnish these facilities put it up with the knowledge that a regulation of the rates was to be made by proper authority.

The CHAIRMAN. Has it not been recognized and admitted that the coordinate power goes with the rate correcting to secure safety of passengers in the operation of trains, and while this may be called a radical extension of the safety-appliance laws, it certainly appears to be nothing else but an extension of the safety-appliance provision.

Mr. KRUTTSCHNITT. It is quite true that of late years the right to regulate to a certain extent has been construed as the right to manage, but this goes so far beyond the assertion of any right to manage that a careful reading of the bill justifies what I have already said, that it would take away initiative from the officers of the roads, and they would be really nothing but figureheads.

If you will allow me, I should like to emphasize a little the meaning of section 9. Under it the commission has authority to issue an order or orders "fixing, determining, and designating the changes, improvements, and repairs to be made in the way and structures." If I understand them, the words "designating and determining" mean to "design," to specify just what changes, improvements, and repairs are to be made in way and structures and the kind of equipment to be used; that is, how you shall build freight and passenger cars and locomotives; prescribing standards of equipment and the kind of materials evidently to be put in them, and also specifying supplies; the kind of lubricating oil, waste, etc., you shall use. "Supplies" is a very broad and comprehensive term. In railroad management it means any or all of the articles used in maintaining and running the railroad.

The CHAIRMAN. This does not take away the initiative of the carrier, because all these matters you have narrated follow an investigation of what the carrier has already initiated. He has already had a chance to do the work which he wants to do, and this contemplates an examination of that to see whether it is done right or not.

Mr. KRUTTSCHNITT. And the commission can place the burden of changing everything the carrier has done if in their opinion they think it wise.

The CHAIRMAN. They may require them to provide better facilities to meet their views.

Mr. KRUTTSCHNITT. Take the question of determining the changes, improvements, and repairs to be made in way and structures. Suppose a road is in desperate financial straits and is maintaining a track and bridges, perfectly safe for the passage of light passenger and freight cars, and light locomotives at low speed. Under this law the commission could say, "You are running entirely too slowly; you must increase your speed; your locomotives are not powerful enough

to make this speed; buy heavier locomotives; your rails are not heavy enough; put down heavier rails; ballast, signal, and rebuild your road; brace up; make it first class, and run at higher speed." How is the road to do it?

The CHAIRMAN. That same apprehension could be raised and urged against the possible procedure of any court or commission in the world; that they might possibly do something wrong, but we assume the officials are going to do right.

Mr. CULLOP. The carrier has a right to be heard, and I do not believe it is reasonable to suppose that the commission would impose upon the carrier terms that they could not comply with. The carrier would have a right to present its side of the case and be heard, and the commission would surely act fairly with reference to any orders it would make, and would not impose burdens which the carrier could not comply with. It has not been exercising an arbitrary power that was altogether unreasonable, so far as I have been informed in any case. This gives the carrier the right to be heard as to everything connected with the improvement or its ability to carry it out; this very provision 9. Now we would have to assume that the commission would disregard the rights of the carrier to reach the conclusion, it seems to me, you contend for in this matter, and go ahead and arbitrarily issue an order imposing a burden which the carrier could not comply with.

Mr. ESCH. The order, Judge Cullop, could not be arbitrary, because at the beginning of section 9 you will notice it is to be upon investigation, with full notice, and after hearing.

Mr. CULLOP. The order could only be made after a hearing, and not otherwise.

Mr. ESCH. Yes.

Mr. SIMS. May I ask the gentleman what he means by the words "desperate financial straits" as applied to a railroad?

Mr. KRUTTSCHNITT. I mean a railroad that does not earn enough to keep its property up in other than such condition as to render indifferent service to the public; that is, slow speed with light equipment.

Mr. SIMS. Do you mean to say a railroad is in desperate financial straits when it can not pay dividends on stock?

Mr. KRUTTSCHNITT. Yes; for it can not maintain its credit structure.

Mr. SIMS. You consider that a railroad is then in desperate financial straits?

Mr. KRUTTSCHNITT. Let me illustrate just what I mean by that answer. People put their money into an enterprise to serve the public in the expectation that the public will allow revenues enough to keep up the property and allow them a return on the investment.

Mr. SIMS. Give them a profit or a dividend on it.

Mr. KRUTTSCHNITT. Yes; give them a profit, else why should they ever put their money into it?

Mr. SIMS. Now, I wanted to follow that up by another question. If the money that would go to the dividend is diverted over one dividend or one dozen, to the permanent improvement of the property by which the value of that property is increased, do they not get their dividend in the increased value of the property?

Mr. KRUTTSCHNITT. Not unless they get rates that will pay those dividends.

Mr. SIMS. If I have a farm and am renting it out at $5 an acre, and next year I must apply those rents to the improvement of the farm, to repairing the fences or the digging of a ditch, and the farm thereby is worth that much more when the rents are added to it, then I have lost nothing although I did not receive rent, as such, during that year.

Mr. KRUTTSCHNITT. How could it be worth more if you could not get either additional rent for it or sell it for more?

Mr. SIMS. I am not assuming you could not sell your property, which is worth more, for more money. I am not saying the railroad property is not worth more when this money is added by way of making valuable improvements.

Mr. STEPHENS. Suppose you do not add to the value of the property but simply make repairs which do not earn any more dividends?

Mr. KRUTTSCHNITT. What would be the object of holding such a property? What would be the object of a shareholder devoting his money to public use if he gets no return for it; if he simply broke even? Why should he not invest in bank stock; why should he not invest in industrials?

Mr. SIMS. I do not mean that is to be the permanent policy of the road; but if the dividends he would otherwise receive were diverted temporarily to the permanent improvement of his own property, does that involve what you call desperate financial straits any more than a farmer would be regarded as in desperate financial straits if he had to use his rents for the improvement of the farm out of which he expects to get further earnings?

Mr. KRUTTSCHNITT. Let us follow your question through its ramifications. Consider again this road which is in desperate financial straits, which earns just enough to provide indifferent service and which is not paying dividends. Suppose it finds some one who is willing to lend it money which it puts into property. Its traffic is small and its revenue is limited by regulation; how is it to earn the money to pay the interest on this additional money, or to pay dividends?

Mr. SIMS. I do not regard interest and dividends as being in the same class. Interest is what you owe for money you have already put in the road or for the use of the money, but dividends represent profit.

Mr. KRUTTSCHNITT. Are not dividends the price or profit which the public owes the men who have devoted their time, money, and brains to its use?

Mr. SIMS. If the public pays a reasonable charge for the service rendered, then the public has nothing to do with whether there is a profit or not to the owners of the road.

Mr. KRUTTSCHNITT. Precisely so, if the charge is really reasonable.

Mr. SIMS. They pay all it is worth to do the work which is done by the carriers.

Mr. KRUTTSCHNITT. Then are they not getting all of the service which can be purchased for the compensation they pay for it?

Mr. SIMS. They may be, but what I am talking about is this: Does a corporation have the right to pay annual dividends to the stock-

holders, the share owners, those who own the title to the property, regardless of whether it is properly maintained or not?

Mr. KRUTTSCHNITT. That is the question. The road may be entirely properly maintained and render perfectly safe service at 10 miles an hour.

Mr. HAMILTON. Do you consider there is a difference between a 6 per cent dividend on stock and 6 per cent interest on a mortgage?

Mr. SIMS. I certainly do, a very great difference, one is an encumbrance and the other is a profit.

Mr. HAMILTON. I was not speaking about the difference between a mortgage and stock. I am talking about whether the man would be entitled to some return for the money he invests in either instance.

Mr. SIMS. But men sometimes make a mistake in their investments, and you should not hold the public responsible for that. When one railroad has to carry a ton of freight 1,500 miles for $5 and another railroad carries a ton of the same kind of freight 1,000 miles for $5, the one that carries it only 1,000 miles for $5 will make more money than the other. The gentleman used those words, and I simply wanted to know what he included in that term.

I do not want to divert you into an academic discussion, but you used those words, and it is a matter we ought to consider and I wanted to know your views.

Mr. KRUTTSCHNITT. And I have tried to explain.

Mr. SIMS. You have answered me very frankly and candidly and I am glad to have the benefit of your answer.

Mr. KRUTTSCHNITT. Now, going back to the second section of the bill, which gives the Interstate Commerce Commission the authority, and, given the authority, directs it to require every common carrier to put in block signals and automatic stops; section 2 and part of section 3 apparently contemplate that block signaling and automatic train stops shall be put in universally, but after that language is used by which the commission apparently is authorized to determine on what parts of the line block signals and automatic train stops are to be installed. If that is clear beyond misconstruction and this authority is to be vested in the commission, I do not see that any objection can be made to sections 2, 3, and 4, except that in section 2, at the end of line 5, it would be well to add lines 9, 10, and 11 of section 5, reading:

but no order shall specify the kind of block system or make or cause any discrimination between automatic, so-called, and nonautomatic.

Mr. ESCH. Is that an addition to section 2?

Mr. KRUTTSCHNITT. No, sir; that is simply a transposition of three lines of section 5 to the end of section 2, where, apparently, they are more appropriate than where they have been placed in the bill.

Mr. ESCH. I drafted this provision in the bill relating to block signals, and it is simply a condensation of the block-signal bill that has been recommended for the last 10 years by the Interstate Commerce Commission.

Mr. KRUTTSCHNITT. I think, if you will look at the bill you will agree that the suggestion has some merit.

Mr. CULLOP. This bill provides that not more than one-fourth of the entire length of the line of a common carrier shall be required to

adopt the block system during any calendar year. How would that operate, for instance, on a system 7,000 miles in length, or, on a system, say, from the Mississippi River to the Pacific Ocean, or from New York to Chicago? Is that a sufficient time in which to install that system?

Mr. KRUTTSCHNITT. I understand this paragraph prescribes a limit beyond which the Interstate Commerce Commission shall not go, but it leaves it in their power——

Mr. CULLOP (interposing). It provides that they shall not require more than one-fourth of the entire length of the line to be equipped with it during any calendar year.

Mr. KRUTTSCHNITT. But it leaves it optional with them to require, say, one-eighth or one-sixth. They can not require more than one-fourth of the entire length of the line to be equipped, but they can use their judgment as to the mileage that they may order to be equipped; at least, that is the way I understand it.

Mr. CULLOP. I only wanted to get your idea about it.

Mr. ESCH. Is it not a fact that there are about 100,000 miles of the 250,000 miles of road that are now supplied with some form of block signals, whether simply the manual-controlled or automatic system? That being true, this provision requiring one-fourth to be equipped during one calendar year, or not more than one-fourth, can already be complied with by the trunk systems in the United States. This does not provide that the system must be automatic, but it provides that some system of block signaling shall be required. Therefore, it would not be a hardship on the carriers for the first year, anyway.

Mr. KRUTTSCHNITT. I am simply trying to answer the chairman's question. I did not say that it was a hardship.

Mr. CULLOP. The proviso applies only to the block system provided for under section 2.

Mr. KRUTTSCHNITT. I understand that the clause, taken altogether, lodges in the commission the power to order such block signaling and train-stop installation as, in its judgment, may seem proper, but it curbs it by forbidding it from ordering more than one-fourth of the entire length of any road's line to be equipped in any one year.

Mr. ESCH. So that, in your judgment, it would be proper legislation to provide that a block-signal system should be installed? In other words, you have no objection to this portion of the bill, barring the amendment you suggested at the end of section 2?

Mr. KRUTTSCHNITT. No, sir; I believe the carriers generally would not. My belief is strengthened since listening to the remarks of the gentleman who said that the commission would certainly be reasonable in their requirements. My fear of burdensome requirements was inspired by the way the commission has treated the roads as to their rates and revenues for a period of some five years now, barring the last six or eight months, during which there has been a large increase in revenues of carriers due to the large volume of business. The business of the carriers has been better lately, but theretofore conditions were extremely bad. It is notorious how extremely difficult it was to get any measure of relief whatever from the commission. It did grant some, but it was inadequate to the needs of the railroads, and I must confess to some fear that if this vast power is lodged in the commission, it might be used in the same way as the power our rates is used and that the carriers would have as great difficulty in

getting the commission to realize their difficulties in questions of management as in questions of revenues.

Mr. Esch. While it would be very expensive to install an automatic block system on a road, the cost being estimated at from $2,000 to $5,000 per mile, it would not be very expensive to install a manual-controlled block system?

Mr. Kruttschnitt. If by a manual-controlled block you mean simply the utilization of existing telegraph stations to keep trains apart by holding the station signal at danger until intercommunication the operator finds that the train is out of his block, that would not cost much, but there are long stretches on western roads where there are no operators for distances of 15 or 20 miles. If a road had to employ operators at intermediate stations in order to operate manual-controlled block signals, they would find that, although the cost of installation was insignificant, the cost of maintenance and operation would be prohibitive. Really, our own line for that very reason adopted the automatic system, because the capitalization of the wages of the extra operators more than paid for the installation of the automatic system. The automatic system is expensive in first cost, but it costs very little to maintain and operate after it is installed. The cost of the manual-controlled system is substantially nothing for installation, other than the cost of quarters for the operators, but it is extremely expensive in operation.

Mr. Stephens. I would like to ask you a question there: Does this bill make it optional with the railroad company to install automatic or manual-controlled block systems, or does it give that option to the commission?

Mr. Kruttschnitt. The lines which I suggested be transposed provide that "no order shall specify the kind of block system or make or cause any discrimination between automatic, so-called, and nonautomatic." By nonautomatic, I suppose, is meant the manual-controlled block system to which Mr. Esch directed his question.

Mr. Stephens. If there is no conflict in the law, the railroad has the option under that provision to choose its system?

Mr. Kruttschnitt. I would understand that if they adopted any block signal that was effective, in the opinion of the commission, that would end the matter, and that the selection would rest with them.

Mr. Esch. Have you any amendment to suggest as to the block signal system provision?

Mr. Kruttschnitt. I was just coming to that. If a block signal system is installed by the carriers and obeyed by the men, collisions are impossible, and that being the case, the bill should be amended in lines 16 to 19 on page 2, where it provides that the operating rules "when approved by the commission, shall be the lawful regulations for the movement of trains on the line or lines affected by such order; and it shall be unlawful to move any car, engine, or train on such line or lines, except in accordance with such rules." The bill provides penalties to be paid by the shareholders if these rules are not obeyed by them. Now, the only way in which you can make collisions impossible without further penalizing the shareholders by making them pay for automatic stops is to make it unlawful for any employee

working under those rules to disobey them, and to punish them by fine for infractions.

Mr. ESCH. Do you mean to penalize the employees?

Mr. KRUTTSCHNITT. To penalize any one who disobeys the rules. There should be no discrimination.

Mr. STEPHENS. You would penalize the shareholders?

Mr. KRUTTSCHNITT. The shareholder is provided for in the bill. You have penalized him. You have attended to his case already. He is named all the way through here under the term "common carrier."

Mr. ESCH. Do you think it a wise thing to have such a system of operating rules?

Mr. KRUTTSCHNITT. Yes, sir; in deed, and we have them now substantially. The American Railway Association for the last 20 or 25 years has been working in that direction, and it has met with fairly satisfactory success. By that I mean that all the important lines of the country are now working under standard uniform rules. A great many of the less important lines have not adopted those rules however.

Mr. ESCH. A bill to carry that out was introduced some three years ago and afterwards reintroduced, but it met with some opposition.

Mr. KRUTTSCHNITT. The American Railway Association has assigned to that duty some of the ablest railroad officers, and, in general, its very best talent. The committee on train rules has been a standing committee, I should say, for at least 25 years.

Mr. ESCH. It has done very good work.

Mr. KRUTTSCHNITT. I can say for the information of the committee that a revision of the rules has been completed and published not over two or three months ago. Now, if the rules, when adopted, are made binding under penalty on all concerned, without discrimination, there is no reason whatever for section 4 of the bill.

Mr. STEPHENS. That is, if this amendment to section 2 that you suggest is adopted—is that the idea?

Mr. KRUTTSCHNITT. Yes, sir; in other words, if the commission is to prescribe rules which are to be the only lawful regulations for the movement of trains, and if it shall be unlawful to move trains except according to those rules, why, clearly their infraction should be penalized. Now, if the carriers—that is, shareholders—are to be penalized for not providing or for disobeying them, everybody disobeying them, including all employees, without exception, should be also penalized.

Now, as to section 5, if it is strictly construed it would make it almost impossible to operate trains. In other words, if, under section 3, the commission—presumably with the cooperation of the carriers—is to codify the rules covering the operation of trains and to approve a system of block signaling, the definition of what a block system is under paragraph 5 and the lines following at the top of page 4 would provide a system so inflexible as to be totally impracticable. For instance, if a man in charge of a train "when ordered or signaled or permitted to proceed from any point" must be informed and assured that the track on which the train is to proceed has been cleared of all other trains for a definite distance and will continue clear, what would be the course of the operating department in case of a wreck or accident to a train in between blocks? Under the

definition of the bill the carrier would be forbidden to allow any train to enter that block until the wrecked train had been gotten out. In other words, you could not send a wrecking train for the relief of that train. You could not, in emergencies, run trains through blocks in which there might be any other trains. It would be unlawful to do so, and it would subject you to penalties if you did. Now, on a great many tracks around yards and terminals you might have cars standing for the purpose of repairing them, and it would be unlawful for a carrier to permit any other train to back into a siding of that sort, because it would be occupied by another train.

Mr. ESCH. Have you any amendment to suggest on that?

Mr. KRUTTSCHNITT. It is hard to see how you would operate work trains in such a block. This would provide that you would have to keep all trains out of those blocks, or clear the line in order to do any work in them.

If these operating rules are to be made or approved by the commission, section 5, down to the middle of line 9, on page 4, is entirely redundant and unnecessary. The commission can prescribe necessary precautions in its rules. There are cases and conditions on many lines that require permissive blocking, and the permissive blocking may be made entirely safe, yet this section prohibits it absolutely.

Mr. STEPHENS. Your idea is, then, that provisions of that sort which are arbitrary should not be incorporated in this measure, but discretionary power should be given the commission?

Mr. KRUTTSCHNITT. Exactly.

Mr. STEPHENS. To make rules which will fit each condition that may arise?

Mr. KRUTTSCHNITT. There must be some flexibility.

Mr. STEPHENS. I can see that.

Mr. KRUTTSCHNITT. You have provided for that flexibility in some sections of the bill and I am only suggesting you provide it in all. Now, passing to section 6——

Mr. ESCH (interposing). Before you go into the question of steel-car construction, I would like to ask one other question with reference to the block signal. You have not expressed any views with reference to the practicability of the automatic stop.

Mr. KRUTTSCHNITT. I have not for the reason that we, and perhaps others, have looked into the merits of automatic stops, but so far do not know of any that have been devised or tried that are altogether successful. There are certain inherent difficulties that seem well-nigh insurmountable. Thought has been crystallized around the automatic-stop system as used in subways, where they are remarkably efficient and successful.

Mr. ESCH. And on the elevated lines?

Mr. KRUTTSCHNITT. And on the elevated lines; but the reason they are so is because of exceptional conditions. The lines are short; there is but one class of trains run on them at but one speed; there is absolute uniformity of kind of train and speed. On elevated roads the devices are not exposed to the tampering of tramps and mischievous boys as they would be on surface lines. In subways they are absolutely protected from such troubles as well as from weather troubles. If you undertook to place an automatic stop, say, on the Pennsylvania or the Baltimore & Ohio lines running out of here, the first condition to be met is that the automatic stop must cut off the

power and apply the brakes after it had been fully established that the engineer had ignored a signal. In what distance is the train to be stopped? In other words, where is the automatic stop to be placed with reference to the danger point? If you place it to stop a passenger train running at 30 miles an hour, it will not stop a passenger train running at 60 miles an hour. If you adapt it to a 60-mile speed it does not suit a 30-mile speed. If it is adapted to passenger speed, t will not suit freight-train speed. That is perhaps the most serious difficulty, and I do not know how, if ever, it will be overcome. I have never seen any system in which any attempt even was made to overcome it.

Mr. Esch. As you doubtless know, the block signal and train-control board for which we appropriated something like $50,000 has made investigation of hundreds of these automatic stop devices, and have given a qualified indorsement of only about 12 or 15 of them. Have the roads done anything toward testing those that the commission has found worthy of experimenting with?

Mr. Kruttschnitt. I can not speak positively, but I do know, in a general way, of experimental automatic stops having been put in on a number of roads.

Mr. Esch. The Southern Pacific System has not done that.

Mr. Kruttschnitt. No; but the Southern Pacific by the installation of block signals to the extent of only about 33 per cent of its mileage has eliminated collisions. If you do not have collisions, why have the automatic stops?

Mr. Hamilton. You say your road has eliminated collisions; by what means?

Mr. Kruttschnitt. By installing block signals. When I say "eliminated," frankness compels me to qualify that by saying we have had one or two collisions where the men have deliberately ignored them. If it were made unprofitable or disagreeable to the men to run by signals of danger, they would not do it.

Mr. Esch. Is that one reason why you want to penalize the men?

Mr. Kruttschnitt. Yes.

Mr. Stephens. People commit murder right along notwithstanding the fact that there is a death penalty attached to it. Of course, I think your suggestion would help, but it certainly would not prevent them altogether.

Mr. Kruttschnitt. The reason I make the suggestion——

Mr. Montague (interposing). Very different motives underlie murder from those that underlie neglect of duty.

Mr. Barkley. And the death penalty is very seldom inflicted even for murder.

Mr. Kruttschnitt. I was about to answer your question by saying that for years the safe operation of the English roads has been held up to American managers as a standard to emulate. The English have systems of signals that are no better than ours—it is questionable whether they are as good—and collisions are almost unknown. English authorities whom I have consulted agree that the reason they do not have trouble from disregard of signals is that it is a misdemeanor, which is always followed by punishment.

Mr. Esch. That is also due to the fact that in England there is very little single-track road.

Mr. KRUTTSCHNITT. Quite true. However, that would abolish head-on collisions only.

Mr. ESCH. And they have no grade crossings.

Mr. KRUTTSCHNITT (continuing). But double track does not do away with rear-end collisions.

Mr. PARKER of New Jersey. I remember that on the road from Liverpool to London there were two express trains running on separate tracks the whole distance, and they seemed to have six or eight tracks all the way, and one train would stop at one set of stations, and another train at another set of stations, and yet they were express trains and each had its own track.

Mr. KRUTTSCHNITT. Quite true; but even in that case, unless signals were obeyed you would have rear-end collisions.

Mr. ESCH. During the past year the English roads have had two very disastrous wrecks, in one of which a Scotch regiment was almost totally destroyed. Of course, that might have been due to the great congestion of traffic due to the movement of troops, but at any rate they had two very bad accidents within a year.

Mr. STERLING. Is the block system expensive to install?

Mr. KRUTTSCHNITT. With us the automatic system has cost from $1,200 to $2,000 a mile. Of course, we have not many lines with very heavy traffic, and therefore we can make the blocks longer than the eastern trunk lines, with heavy traffic, can make them. Of course, the cost is dependent on the length of the block.

Mr. STERLING. How long are they usually?

Mr. KRUTTSCHNITT. On our main lines through Utah, Nevada, New Mexico, Arizona, and west Texas, they run on an average of about 2½ miles.

Mr. BARKLEY. What is the name of your road? I came in a short time after you started.

Mr. KRUTTSCHNITT. The Southern Pacific.

Mr. SIMS. In the actual operation of trains, is it a fact that the employees in charge of trains willfully ignore these signals?

Mr. KRUTTSCHNITT. No; I do not think a man has ever done that.

Mr. SIMS. Then why penalize them? What effect would that have?

Mr. KRUTTSCHNITT. It would make them careful. All men are more or less careless. For instance, consider the risks that are run every day in our streets with automobiles. I do not suppose a chauffeur every deliberately planned an automobile wreck or to run a man down with malice prepense; but the many accidents are due to indifference to the consequences of their acts; inborn carelessness, taking chances and unless chastened by discipline and restrained by the fear of punishment for infraction of law the locomotive runner is not unlike the automobile runner. The only corrective for carelessness is to cultivate, in every possible way, and at all times prudent habits, and the degree of success, of course, depends on the earnestness of the efforts of the management and the cooperation of the men. I am glad to say that the results we have obtained would never have been obtained but for the loyal cooperation of our men and for the faithful performance of their duties by the officers.

Mr. SIMS. And you think penalizing the men would only help you to do what you are trying to do, anyway?

Mr. Kruttschnitt. Yes; by reaching the few men we can not reach with the means at our command.

Mr. Esch. It is often alleged against the installation of the block system or the automatic stop that if you install it the engineman relies upon these artificial warnings—the stops, semaphores, and signals—and relaxes that alertness which he otherwise would exercise; is that true?

Mr. Kruttschnitt. I do not think that follows from the block signal. The block signal promotes care and alertness and does for him what he can not possibly do himself. In fogs or in obscure places, he can not see a preceding or an approaching train, but with care in acting on the warnings conveyed by signals he can avoid danger. The automatic train stop is designed to relieve him from performing his most important duty; in fact, it says to him, "You need not heed the signals; I am designed to relieve you of this duty. Go ahead, read your paper or novel, gossip with your fireman if you like. When you come to a signal set against you, I will attend to stopping the train." In withering and dulling habits of prudence and caution, it offers an inviting field to carelessness and risk.

Mr. Stephens. The automatic stop you think would have a tendency to make the engineman careless?

Mr. Kruttschnitt. I do not think there is any doubt about it. It would have that effect on me and I think it would have that effect on you.

Mr. Stephens. I think so, too.

Mr. Esch. It eliminates the human element.

Mr. Kruttschnitt. Yes.

Mr. Stephens. In regard to your suggestion about penalizing the employees, in some countries I understand they penalize the people on the streets as well as those who drive machines. For example, in Paris, I understand, if a pedestrian gets in the way of traffic and gets run over he is arrested and penalized for getting in the way.

Mr. Kruttschnitt. He is. A friend of mine who was traveling in France in a rented motor met with an accident, running down a pedestrian, who was arrested, the chauffeur being detained only long enough to get his statement. The pedestrian was held and punished.

Mr. Barkley. That ought to encourage the purchase of automobiles instead of having a war.

Mr. Kruttschnitt. I should think it would encourage a man to lease an automobile, so as to evade all responsibility, instead of owning one. The other objection (to finish with section 4) to superadding this train stop to block signals which if operated under proper rules will prevent collisions is the expense, which is large. In a discussion with an eminent electrician who has just perfected a train stop, not yet on the market, I asked him about what it would cost. It seemed to possess much merit, but like all others it could not stop trains at different distances from danger points. He thought the cost would be somewhere around $1,200 a mile. There are so many directions in which the roads need more money for improvements much more necessary than in this that I think the question of cost should be given very careful consideration.

Mr. CULLOP. The question of when the improvement should be ordered or required would be a matter within the discretion of the commission.

Mr. KRUTTSCHNITT. Yes. I have already adverted to that, and what I have said was in answer to questions.

Now, passing to section 6, with reference to steel cars. I do not see any particular objection to this section, applying as it does to steel cars and cars with steel underframe. The words "steel underframe," together with "steel," seem to have been used throughout except in the second line on page 5, and I should assume from the context it had been inadvertently omitted. This section allows the commission to extend the time during which the equipment shall be changed. I do not think that anyone could offer much objection to section 6. It is perhaps not appreciated what the carriers have accomplished, in the absence of legal requirement, since 1912. At the present time 33 per cent of all passenger vehicles are steel or steel framed; that is, one-third of the equipment of the country.

Mr. STERLING. Are the companies adopting steel cars now?

Mr. KRUTTSCHNITT. I think the best answer to that is to read from a circular of information issued by Mr. Jackson's committee: On January 1, 1916, there were under construction 1,094 passenger vehicles, of which 98.3 per cent were steel, 1½ per cent steel underframe, and only two-tenths of 1 per cent wood. In other words, it might be said without substantial error that on the 1st of January, 1916, there were no wooden passenger cars under construction; and that condition results from the voluntary acts of the carriers, uninfluenced by law. I think, however, there is a postal regulation which requires all new mail cars to be of steel or steel framed.

Mr. ESCH. We put in that provision the words "steel or steel underframe" on account of an objection coming to us from southern California—I do not know whether from the Southern Pacific or the Santa Fe—that their trains cross the desert and during the summer time, owing to the intense heat, the all-steel car would be almost unbearable. There was some testimony before the subcommittee to that effect.

Mr. KRUTTSCHNITT. We did not make that objection.

Mr. ESCH. Then it must have been some other road; perhaps the Santa Fe.

Mr. CULLOP. Is there anything in that objection, from your experience?

Mr. KRUTTSCHNITT. Well, to make a frank answer I will have to tell you our experience. We use an all-steel coach, minimizing the wood in the interior. The objection of excessive heat was made in the beginning. We built one coach and ran it over all parts of our lines to invite criticism. There was little or none made, but when we built steel coaches in considerable numbers the objection was made, and in order to run the objection down we equipped a number of wood and steel coaches in the same train with thermometers, and instructed conductors to keep a record of the readings for a period of 30 or 60 days; we found no appreciable difference in the thermometer readings in the two kinds of cars.

Mr. STEPHENS. Will you speak a little louder, please? I did not hear you.

Mr. KRUTTSCHNITT. I said some objection had been made as to heat and to develop whether there was any merit in the objection we had trains equipped with thermometers, those trains having both wooden and steel coaches in them, and after an experience of from 30 to 60 days we found no difference in the thermometers in the different kinds of cars.

Mr. CULLOP. Then the objection was only imaginary.

Mr. KRUTTSCHNITT. A good many objections that the public makes are imaginary, but by the exercise of tact and good nature in offering explanation they drop them.

Mr. CULLOP. They find that the complaints were psychological only.

Mr. KRUTTSCHNITT. Yes. We have a very large proportion of steel equipment—in fact, all on our important lines are built of steel, and neither I nor our officers have received any complaints for years. In other words, there are none.

Mr. STEPHENS. Do steel coaches cost more than wooden coaches?

Mr. KRUTTSCHNITT. Oh, very much more.

Mr. ESCH. The average cost is about $12,000, is it not?

Mr. KRUTTSCHNITT. It is from $12,000 to $13,000. We have just let some contracts for about $13,000.

Mr. CULLOP. I do not understand you.

Mr. KRUTTSCHNITT. I said that we had let contracts for steel coaches and chair cars at about $13,000.

Mr. BARKLEY. On an average, how much longer do you estimate that a steel car will last than a wooden car?

Mr. KRUTTSCHNITT. We have not had steel cars long enough to determine that. We have had steel freight cars about 15 or 16 years. We have had steel gondolas that long, and, by occasionally painting them, they are to-day in very good condition. However, in estimating depreciation, as we are required to do under the regulations of the Interstate Commerce Commission, we have estimated the life of a steel car at 33 years.

Mr. MONTAGUE. What would be the life of a wooden car?

Mr. KRUTTSCHNITT. From our experience with wooden cars in the past, with much lighter loads and smaller locomotives, I should say that under those conditions, its life would be 25 years. At the present time I should cut that estimate down very materially, and would say probably 15 to 20 years.

Mr. MONTAGUE. The life of the steel car is probably double that of the wooden car?

Mr. KRUTTSCHNITT. Yes, sir; I should say approximately double.

Mr. STEPHENS. Taking into consideration the service rendered, it is cheaper for you to buy steel cars than wooden cars, considering the length of service you get out of them, is it not?

Mr. KRUTTSCHNITT. The best answer to that is that we are buying and for a number of years have bought nothing but steel and steel-underframe cars.

Mr. PARKER of New Jersey. How much more do they weigh—one-third more?

Mr. KRUTTSCHNITT. No, sir; our wooden 100,000 pound box car weighs about 40,000 pounds, and our steel car weighs a scant 42,000 pounds.

Mr. PARKER of New Jersey. Is the capacity the same?

Mr. KRUTTSCHNITT. The capacity is the same.

Mr. ESCH. They have the same capacity?

Mr. KRUTTSCHNITT. Yes, sir.

Mr. PARKER of New Jersey. You say the cost of the steel car is from $12,000 to $15,000; what is the cost of the wooden car?

Mr. KRUTTSCHNITT. We have not bought any for so long that we do not know, but my recollection is that the last ones bought, which would probably run back to 1902 or 1903, cost in the neighborhood of $7,500.

We now come to 7, the headlight section. There is probably nothing that has been more discussed than the electric headlight, because of the persistent efforts of the manufacturers of electric headlights to get them prescribed by the States, and they have been successful in a great many. They will probably not be so successful from now on, because headlights have been devised that avoid patents those gentlemen hold, and they are not selling as many as they formerly did. The principal objection to electric headlights, as has been stated time and again—and I think that the experiments that have been made support the objection—is that they make it extremely difficult to distinguish signals on the road at night. On a double-track road, the electric headlights on opposing trains are blinding, and I can not understand how engineers can see anything whatever. Yet we are all required by State laws to equip our road pretty much from one end to the other with electric headlights.

Mr. MONTAGUE. In the case of automobiles, as I understand it—although this is hearsay, because I am not the owner of an automobile—the regulations of the various cities require the dimming of the lights?

Mr. KRUTTSCHNITT. Yes, sir.

Mr. MONTAGUE. On the same principle you have stated?

Mr. KRUTTSCHNITT. For the same reason, that they are blinding to the man approaching them.

Mr. ESCH. Do you think there is any necessity for putting in the provision in section 7 with reference to headlights, in view of the act passed at the last Congress enlarging the powers of the boiler-inspection service so as to cover all the appurtenances of locomotives? Was not that very elaborate hearing before the commission on that very point, so that the commission could be advised as to the proper rules and requirements as to headlights?

Mr. KRUTTSCHNITT. Possibly, although I am not familiar with it; but this thought occurs to me—and it seems to be very pertinent that I should utter it—in all my life—and I hate to say how many years that is, because I am near the end of it—I have never had a defective or insufficient headlight offered as the excuse for an accident.

Mr. HAMILTON. Will you repeat that, please?

Mr. KRUTTSCHNITT. In all my experience I have never had offered as an excuse for an accident the assertion that the headlight was at fault. In other words, a great many of the things in this bill are really straw men set up to be knocked down. The fatalities due to faults in equipment and track amount to extremely few in comparison with the total number of fatalities. The accidents due to the want of electric headlights, I should say, are nil, or absolutely zero. If this law under discussion, which would impose so great expense on the railroads and so greatly hamper their operation, were passed and

all deaths due to collisions and defects of track and equipment were thereby eliminated, it would amount to but 1.6 per cent and 1.2 per cent, respectively, of the total deaths reported by the Interstate Commerce Commission. Ninety-seven and two-tenths per cent of all deaths resulting from train operation could be avoided by the passage of laws penalizing trespassing and carelessness. Trespassing is unknown in England. You can see posted at every English station the English law with respect to trespassing; my recollection is that it costs 20 shillings to walk on a railroad track in England.

Mr. HAMILTON. Even if the walking is good?

Mr. KRUTTSCHNITT. Yes, sir; even if the walking is good.

Mr. SIMS. Do they punish people who walk on the railway tracks as trespassers? Is that what you have reference to?

Mr. KRUTTSCHNITT. Yes, sir.

Mr. PARKER of New Jersey. Those penalties are imposed there by the justices of small courts, and it would be rather difficult to enforce a provision of that sort under a United States statute because of our want of machinery.

Mr. CULLOP. It could be done by the States, however, very easily.

Mr. KRUTTSCHNITT. With all due respect, I think if the same ingenuity that is applied to devise other laws were applied to this question of trespass, the difficulty might be met.

Mr. ESCH. Yet, I do not think that any State has passed a law against trespassing on the right of way of a common carrier. I have investigated the matter about two years ago, and I did not find that a single State had enacted such a law.

Mr. KRUTTSCHNITT. That is because the American citizen deems it a sacred right to walk on a railroad track.

Mr. PARKER of New York. It is against the law in the State of New York to walk on a railroad track. The law is not enforced, but there is such a law.

Mr. KRUTTSCHNITT. That is the difference between the English and us; they make laws and enforce them, while we make laws and do not enforce them.

Mr. SIMS. In England where the railroad crosses an ordinary country highway, is it required that the track shall be depressed or the highway elevated so as to avoid any grade crossing?

Mr. KRUTTSCHNITT. They do not have many grade crossings; but in a tour that I made in England three years ago I observed that we crossed a great many lines at grade.

Mr. SIMS. Is not a very large number of the accidents in this country due to grade crossings, both in cities and in the country?

Mr. KRUTTSCHNITT. According to the report of the Interstate Commerce Commission on the fatalities on railroads, the total number for the last fiscal year was 8,278, and 4,996 of them were due to trespassing.

Mr. SIMS. I am talking about that particular matter of crossing railroads at grades, regardless of whether there is any trespassing involved, or not.

Mr. KRUTTSCHNITT. I was going to answer your question by the process of elimination. That leaves, of course, 3,282 as the number of deaths from all other causes. This statement was prepared from the report of the Interstate Commerce Commission for the year ending June 30, 1915. I do not remember whether or not they classified

the accidents so as to show the grade-crossing accidents. They certainly would not be accidents due to trespassing, because if you cross a railroad track on a highway you are not a trespasser.

Mr. Esch. Will you include that information when you revise your statement, so that it may be printed in the testimony?

Mr. Kruttschnitt. Yes, sir.

Mr. Montague. Did you conclude your process of elimination? You were about to give the number of accidents occurring on grade crossings.

Mr. Kruttschnitt. I am afraid that I can not, because it does not appear here. An examination of the report of the Interstate Commerce Commission shows that the fatalities occurring at grade crossings amounted to 1,086 for the fiscal year ending June 30, 1915.

Mr. Hamilton. How many accidents does your statement show as the result of negligence and the acts of individuals?

Mr. Kruttschnitt. The total under the head of "Negligence and acts of individuals" is 2,904.

Mr. Stephens. Does that include both employees and the public?

Mr. Kruttschnitt. It includes both. The heading or caption is "Causes of fatalities on railroads of United States in accidents involving train operation."

Mr. Sims. What is included by you and by the commission in the term "trespass"? What does it take to constitute a trespass? I do not mean a criminal trespass.

Mr. Kruttschnitt. In a general way, unauthorized people walking on railroad tracks, going across the country using the tracks as short cuts, are trespassers. The term also includes tramps stealing rides on trains and on the undergear of freight cars. Many are killed by falling off. We have to report them, of course, as fatalities. They are classed as trespassers, because, of course, they have no business on the trains.

Mr. Montague. A good many such accidents occur on bridges, in cases where people are walking on bridges.

Mr. Kruttschnitt. Yes, sir; I include that in walking on the track.

Mr. Sims. Do you think that any substantial inconvenience would result to the general public if they were prevented from using railroad tracks for that purpose?

Mr. Kruttschnitt. In some cases there would be great inconvenience, but a man should be made to take care of himself even at some inconvenience to himself.

Mr. Sims. It seems to me you are right about that. Why not give the Interstate Commerce Commission power under the law to provide penalties for trespassing?

Mr. Kruttschnitt. You took the language out of my mouth; I was going to say that since carriers are held responsible for everything under the sun because they engage in interstate traffic, why not make it a penal offense to trespass on a railroad track used to transport interstate traffic. It seems to me that would be a reasonable provision.

Mr. Sims. If we had the power to enact such legislation——

Mr. Kruttschnitt (interposing). If you have that power and will exercise it you will save the lives of about 17 persons every day.

The CHAIRMAN. Can not the States put them in jail for trespassing ust as conveniently as Congress can?

Mr. KRUTTSCHNITT. That might be done, but there are a great nany Federal laws that are enforced, while State laws relating to he same offenses are not enforced.

Mr. ESCH. Did you notice that section 7 does not fix the standard or headlights as some of the State statutes do? I think some of he State statutes say that the standard shall be 1,500 candlepower ithout the aid of a reflector, and some say that the engineman shall e able to see a body thrown on the track at a distance of 800 feet nd some say 1,000 feet. This section 7 does not fix the standard, ut leaves it to the commission to prescribe the standard after a ill hearing or investigation.

Mr. KRUTTSCHNITT. I did notice the feature to which you refer. will relate an incident that shows how the power to interfere in etails of management kills initiative. Southern Pacific, long before here was any law on the subject in any State which it served, replaced l of its oil headlights with a very efficient type of acetylene headght that had been devised by its own employees and was manuctured in its own shops. These were admirable lights in every espect, gave no trouble in operation, and were immeasurably superior the oil lights, and, while not as brilliant as electric lights, were xtremely efficient and satisfactory. The legislature of Texas, in its isdom, and under the blandishments of a lobby of electric light eople, passed an electric headlight law, although our operating fficers appeared before the committees of the legislature and exlained what we had done. On the effective date of the law we were equired to scrap about 700 first-class acetylene headlights that cost s $30 or $40 apiece. Now, in the face of that experience, what is here to encourage an officer to initiate improvements which at any me may be swept away by legislation?

Mr. SIMS. Have you considered the question of whether, if we hould adopt a national headlight law and make it compulsory on ailroads engaged in interstate commerce, that would prevent the tates from passing any laws on that subject?

Mr. KRUTTSCHNITT. This bill so provides.

Mr. SIMS. It might in some sense be a protection to have a national eadlight law.

Mr. KRUTTSCHNITT. Section 15 of this bill covers that.

Mr. SIMS. Provided it is enacted. That is not provided for in xisting law.

The CHAIRMAN. If we should carry out all of Judge Sims's sugestions, we would have to give the commission power to abolish tate lines.

Mr. STERLING. Do you think that the Federal Government ought penalize trespassing, or the State governments?

Mr. KRUTTSCHNITT. I think the long arm of the Federal Government can reach the offender wherever he is. As has been observed, here is a law against trespassing in New York and we know it is nore honored in the breach than in the observance. I have never eard of anybody having been punished, and it is notorious that tate laws are very ill enforced and very little attention is paid to hem.

The CHAIRMAN. Of course, I have never lived in an inferior State, but my observation has been that State laws in my part of the country are a great deal better enforced than Federal laws.

Mr. KRUTTSCHNITT. Well, your experience has been fortunate and different from mine.

The CHAIRMAN. Whenever that fails to be so, I think I will move to another State.

Mr. KRUTTSCHNITT. In what State do you live?

The CHAIRMAN. I live in Georgia.

Mr. KRUTTSCHNITT. Well, that is a good place to go to if the State laws are better and are enforced, and I think I shall advocate in the State where I live that they copy the Georgia laws.

The CHAIRMAN. You may have to copy the men also. We have a regulating commission which treats them right and fairly.

Mr. ESCH. This question occurs to me: If under the act of last session, giving the car-inspection service the right of inspecting all parts of the locomotive, including the headlight, the commission can lay down rules and regulations prescribing the headlight, would there be any need then of inserting section 7?

Mr. KRUTTSCHNITT. None whatever. It could come out.

Mr. ESCH. Some months ago they had a very elaborate hearing lasting several weeks, but I understand as yet the commission has not handed down its decision or formulated its standard, and I do not know when they will.

Mr. HAMILTON. Mr. Esch, what is it you propose to insert if you strike out section 7?

Mr. ESCH. Nothing.

Mr. HAMILTON. I thought you said if certain things were done. I did not catch what you said.

Mr. ESCH. If the Interstate Commerce Commission prescribes the standard under the act we passed last session, giving the car-inspection service the right to inspect all parts of the locomotive, including the headlight, then this would not be necessary.

Mr. HAMILTON. I understand. There was a little confusion in the room, and I did not hear you.

Mr. PARKER of New York. I would like to ask you one question. Which do you consider the best for a headlight, the acetylene light or the electric light, as a personal opinion?

Mr. KRUTTSCHNITT. I think for two reasons the acetylene is better. It is not as brilliant and therefore not as blinding as the electric light, and it is vastly cheaper.

Mr. DEWALT. Is not this an additional reason: The electric contrivance is more apt to get out of order by reason of the connections, etc., than the acetylene light would be?

Mr. KRUTTSCHNITT. Yes, as to the electric light of three or four years ago. The current was generated by a separate dynamo that was liable to get out of order, and the adjustments of the carbons in the light was delicate and got out of order. In the light devised by Southern Pacific engineers the dynamo is replaced by a storage battery and the carbons by a nitrogen filament lamp. The device is extremely simple and does not get out of order any more than did the acetylene apparatus.

Mr. DEWALT. And as far as continuous use is concerned, it is just as effective.

Mr. KRUTTSCHNITT. Just as effective, barring the objection to its brilliance, which is blinding.

Mr. DEWALT. I understand that.

Mr. ESCH. From the viewpoint of the man in the cab, does he favor the electric headlight?

Mr. KRUTTSCHNITT. Some do and some do not.

Mr. ESCH. There is no unanimity of opinion on the part of engineers with reference to the use of a particular headlight?

Mr. KRUTTSCHNITT. No.

Mr. ESCH. I had the impression or understanding that the engineers quite generally favored the electric headlight.

Mr. KRUTTSCHNITT. I can not tell you with as much certainty as I should like what the general opinion of our engineers is, because for a number of years now I have not been in immediate management of the properties. I am appearing here to-day because our president is a long way off, and can not get here. He could answer that question better than I can; but I think it is fair, in frankness, to say that I share your impression that more of the men favor the electric headlight than do not. Just why they do I can not understand, because the objections are well founded.

Mr. ESCH. Is there anything in the point that in going around a sharp curve the pencil of light made by the headlight can not follow the track, hence the track itself is in dark shadow, and therefore the electric headlight in going around a curve would not be an aid, but might be a disadvantage? Is there anything in that?

Mr. KRUTTSCHNITT. Certainly the headlight beam points in the same direction as the locomotive, and in going around a sharp curve it can not point on the track.

Mr. ESCH. And that intensifies the darkness in the field outside of the pencil of light?

Mr. KRUTTSCHNITT. I suppose by contrast it does.

Mr. BARKLEY. What effect would that sort of light have on any approaching object? Could it not be seen much farther, even if the light was straight out in front of the engine; could not anyone approaching that light see it much farther than they could the old light?

Mr. KRUTTSCHNITT. Yes; but even with the old oil headlight a man walking near the track or crossing it could see it far enough off to keep out of the way of harm.

Mr. PARKER of New York. My object in asking you which one you preferred was because I know that many people who drive an automobile prefer the acetylene light to drive by if it were not for the fact they have to get out and light them and it is a matter of laziness. If they could light the acetylene light by pushing a button, they would prefer that light to the electric light for the reason Mr. Esch stated, that the flare is greater and when you go around a short curve you can see much better with an acetylene light than an electric light focused right straight ahead in a narrow line. That I know to be so, and if it was not for the fact that you have to get out and turn out the acetylene light a great many people driving automobiles would prefer the acetylene to the electric light.

Mr. STEPHENS. I do not want to divert the argument to another subject, but that is purely a matter of reflection and not of the light itself. It is the reflector that concentrates it and not the light. One

light may be stronger than another, but the fusion of it and the spreading of it is purely a matter of the reflector.

Mr. PARKER of New York. Then there is the matter of getting out of order also.

The CHAIRMAN. Is there anything further?

Mr. ESCH. We have already considered sections 8, 9, and 10, I believe.

Mr. KRUTTSCHNITT. Yes.

The CHAIRMAN. If you are through, we will hear the next witness.

Mr. NEALE. Mr. Chairman, our next witness is Mr. Atterbury, the vice president of the Pennsylvania Railroad.

Mr. KRUTTSCHNITT. I beg your pardon, there is a matter I overlooked and which I would like to correct, with the permission of the chairman. Mr. A. H. Smith, president of the New York Central lines, was to have been here, but was unavoidably detained. He sent this letter which he asked me to present to the committee, and with your permission, as it is short, I will read it.

NEW YORK CENTRAL LINES, GRAND CENTRAL TERMINAL,
New York, April 27, 1916.

Mr. J. KRUTTSCHNITT,
Chairman Executive Committee Southern Pacific System
165 Broadway, City.

MY DEAR MR. KRUTTSCHNITT: I regret that I will be unable to attend the hearing to consider House bill 10485, and trust that you will have an opportunity to present my views on the subject, which, briefly, are as follows:

The larger provisions of the bill intend to convey to the Federal authorities, as represented by the Interstate Commerce Commission, general supervision of the appliances and methods employed in interstate traffic. As practically all the principal carriers are now interstate carriers, such regulations are preferable to the conflicting regluations which are at the present time and must continue to follow from local State regulations.

Before this bill, however, becomes a law, it would seem most desirable for the public good that further consideration be given to it and to the several bills now pending in order that they may be embraced in some comprehensive and fundamental law giving to the commission both the power to regulate and the authority to change rates, and supervise other matters, which will at all times insure the integrity of the property thus devoted to public service.

Such an act should be relieved of a few of the petty details which appear in this one. This bill, after extending general powers, proceeds to deal with details, which should be flexible, according to the needs of transportation.

For instance, it specifies the class of signal systems which should be used, which prohibits permissive signaling, caution cards, etc., which, if rigidly enforced, would practically tie up many roads during accidents or other congested conditions. Permissive blocking is used thousands of times daily at present, as an indispensable means of handling traffic, and there is no reason why it should not be. The point is, that such particular specifications concerning signaling should not be introduced in a bill purporting to be of general scope.

Again, the bill deals with automatic train stops, and while such devices may be desirable, it is not understood why they should be specified specifically, any more than a thousand other devices and appliances which are now used voluntarily by the railroads, such as locomotive injectors, staybolts, rails, track bolts, crossties, connecting rods, brake rods, brake shoes, and many articles, which, even with the greatest care, cause a hundred fold more accidents than the presence of an automatic stop would prevent.

It is not understood why even steel cars should be specified, although all roads are proceeding in that direction as fast as they are able to do so, as a matter of economy. Other materials may become available. The details should be left to the discretion of the commission, after an investigation and hearing.

There is no need to make specific mention as to a headlight. So far as this company is concerned, and so far as the other larger companies are concerned, the best known headlight, based upon experience of the practical engineer as well as the scientist, is now being used.

In other words, it would appear that the various bills now pending should be reviewed and digested, and that mature consideration should be given to the fundamental problem of railroad regulation, in which there would be eliminated these minor details which have been doubtless largely influenced by the interested parties in special appliances.

While I am thoroughly in sympathy with the great fundamental principle of railroad regulation, I think it most essential, for the public good, that we proceed with deliberation and make the law, when enacted, as fundamental as the Constitution itself, and eliminate the petty details of this and similar bills.

Yours, very truly,

A. H. SMITH, *President.*

Causes of fatalities on railroads of United States in accidents involving train operation, fiscal year ending June 30, 1915.

	Trespassing.	Negligence and acts of individual.	Defects of road and equipment.	Other.	Total.
A.	B.	C.	D.	E.	F.
Collisions:					
Rear end butting				91	91
Train separating			3		3
Miscellaneous				40	40
Total			3	131	134
Derailments due to—					
Defects of roadway			43		43
Defects of equipment			54		54
Negligence of employees		20			20
Unforeseen obstruction of track				60	60
Malicious obstruction of track		12			12
Miscellaneous causes				59	59
Total derailments		32	97	119	248
Other train accidents			14	14	28
Total train accidents		32	114	264	410
Falling from or getting on or off equipment	1,102	520			1,622
Struck or run over by equipment	3,668	2,010			5,678
Other causes	226	342			568
Total nontrain accidents	4,996	2,872			7,868
Grand total	4,996	2,904	114	264	8,278
Per cent of total	60.35	35.08	1.38	3.19	100.0
Total fatalities, year ending June 30, 1914					9,893
Total fatalities, year ending June 30, 1913					10,550

Analysis of causes of fatalities from derailments due to defects of road and equipment.

	1915	1914	1913	1912
Roadway:				
Broken rail	6	24	17	52
Spread rail	3	3	8	6
Soft track	3		5	13
Bad ties	3	3	2	
Sun kink	2	3	1	2
Irregular track	11	12	14	15
Total, including miscellaneous	43	66	70	122
Equipment:				
Broken or defective wheels	11	15	18	15
Broken or defective axles or journals	6	2	6	2
Broken or defective brake rigging	3	9	5	4
Broken or defective draft gear	3	2		6
Broken or defective side bearings, arch bars, and trucks	10	4	11	11
Failures of brakes, hose, etc	9	1		5
Failure of couplers	3	2	2	2
Total, including miscellaneous	54	50	49	68
Total due to defects of road and equipment	97	116	119	190

STATEMENT OF MR. W. W. ATTERBURY, VICE PRESIDENT OF THE PENNSYLVANIA RAILROAD, BROAD STREET STATION, PHILADELPHIA, PA.

Mr. NEALE (attorney Pennsylvania Railroad Co). Mr. Atterbury, you have examined this bill and reached certain conclusions?

Mr. ATTERBURY. I have.

Mr. NEALE. Please state them to the committee.

Mr. ATTERBURY. Gentlemen, I express the opinion of the Pennsylvania Railroad and some of the other railroads in this country that action on this bill and kindred bills should be postponed until such time as the commission provided under Senate joint resolution 60, the Newlands resolution, shall have been organized and have made a full investigation of the railroad situation. The railroad situation to-day is an exceedingly serious one. The officers should be engaged in the proper performance of their duites, and yet while the Pennsylvania Railroad is as fully manned as any other railroad in the country almost every executive officer, the general manager, and the general superintendents are engaged in public hearings such as this and are before State commissions or railroad commissions or legislatures, so that we really do not have the time to attend to the legitimate functions of our business of moving traffic. Now if action on this bill and on kindred bills could be so postponed until after the joint commission, under the Newlands resolution could be given an opportunity to state the railroad situation to the country I think the railroads and the public would be very well served. My objection to consideration of this measure is not due to any objection to the increased assumption by the Interstate Commerce Commission of regulatory powers.

I would like to read some public documents. For instance, Mr. Rea, in 1914, before the chamber of commerce in New York, made use of this expression——

Mr. NEALE (interposing.) Perhaps you had better state who Mr. Rea is.

Mr. ATTERBURY. The president of the Pennsylvania Railroad.

> The regulatory power of the Interstate Commerce Commission should be clearly extended to the supervision and control of all rates and practices which directly, or remotely, affect interstate transportation or commerce.

That was rather an advanced position in those days, but I think since that time the railroads of the country have appreciated the wisdom of it.

Mr. George Stuart Patterson, who is our general counsel and one of the ablest of the railroad legal fraternity in the country, makes use of this expression:

> If jurisdiction over operating conditions is to be taken away from the States, it would probably be desirable to vest jurisdiction in the Federal commission over certain operating matters.
>
> Public policy demands that full jurisdiction be given to the Federal commission over rates and practices affecting rates.
>
> Governmental control over operating conditions is more likely to tend to inefficiency than to efficiency, though national control, through a commission, is infinitely better than control through Federal or State statutes, or State commission.

Mr. Otto H. Kahn, who represents one of the large foreign investment bankers, makes use of this expression:

Railroads should be freed from the unfair, unreasonable, and illogical situation of being subjected, as they now are, at one and the same time to special regulatory and supervisory legislation, and to the inhibitions of the Sherman antitrust law, which is based upon a theory and designed to serve a purpose essentially contradictory to the theory and purpose of our existing railroad legislation. Furthermore, the same body which determines earnings by fixing rates should be charged with the responsibility of hearing and determining wage disputes between railroads and their employees, or if that be not practicable than at least with the duty of giving full weight and consideration to all factors that go to enhance the cost of operating railroads, such as legislative enactments like the full-crew law, increased taxation, advance in wages, etc.

Mr. Ivy L. Lee, who is one of the leading of the younger publicists and economists in this country, in a paper delivered at one of the large traffic club dinners in New England, makes use of this statement:

Until we have a unified system of regulation instead of our present inconsistent rule of 49 masters, the sound and valuable principle of private ownership under public regulation will not have had a fair trial.

Mr. Samuel O. Dunn, who is one of the leading editors in this country, makes this statement:

There should be legislation by Congress empowering the Interstate Commerce Commision to control all State action which directly or remotely burdens interstate commerce.

I am simply reading these expressions from prominent men representing interests closely allied to the railroads to indicate that the position of the railroad to-day is not one in opposition to more general control of the common carrier by the Interstate Commerce Commission.

Having expressed that view, I shall try briefly to criticise the bill under discussion. We have no material criticism to make of sections 1 and 2. We have not material criticism to make of section 3. The Pennsylvania Railroad to-day has 100 per cent of its lines under control of the manual or automatic block, and all the railroads with which I am associated are in very much the same position. If the Interstate Commerce Commission acts in this regard with the wisdom with which it has usually acted in the past, I have no doubt that the application of this section would not be a hardship to the common carriers.

Now, in regard to section 4, and particularly in connection with the automatic train-stop, I want to say that if sections 8, 9, and 10 remain in the bill, there is no necessity for this section 4, because sections 8, 9, and 10 are so comprehensive as to cover this feature as well as all other features of operation. But if sections 8, 9, and 10 are eliminated, I have this to say. The Pennsylvania Railroad has been at the head of the procession in the matter of railroad development for the past 60 or 70 years, and we will try to continue in that position. We have a train-stop in use on a portion of our line, but neither the one in use on our line, nor any other system that we have examined as yet, measurably fills the requirements that we believe are essential to a successful train-stop. I have not said anything about the question of first cost, nor the of expense of maintenance, nor of the danger that follows the introduction of more complicated devices. I simply say, without regard to the danger and without regard to the question of the first cost, that there is no train-stop in existence to-day that meets the requirements of the Pennsylvania Railroad.

Mr. CULLOP. Is the automatic train-stop of which you speak very expensive?

Mr. ATTERBURY. I think that they would be pretty nearly as expensive, and possibly more expensive, than the automatic signaling system. Now, as an operating officer, I very much prefer to have the money that I would be required to spend under the train-stop order, for other purposes. I would prefer to take that money and put it in automatic blocks on some parts of my line, where it would serve to make my railroad more efficient and safe.

Mr. CULLOP. What does your block system cost your road per mile for installation?

Mr. ATTERBURY. The automatic block that we are using will cost—I give these figures roughly, and would like to have the opportunity to correct them——

Mr. CULLOP. You will have that privilege.

Mr. ATTERBURY. It will cost from $1,500 to $1,800 per mile of single track.

The following installations were made with electropneumatic lower quadrant signals, with direct current track circuits, signals on bridges:

1893. Jersey City to Perth Amboy Junction, New York Division, 19 miles, 4-track line, $110,500. Per mile, $5,815. Per track, $1,454.

Holmesburg Junction, to Thirty-fourth Street, New York Division, 11 miles, 4-track line, $39,527. Per mile, $3,593. Per track, $898.

1898. Monmouth Junction to Holmesburg Junction, New York Division, 36 miles, 4-track line, $210,233. Per mile, $5,840. Per track, $1,460.

1899. Perth Amboy Junction to Monmouth Junction, New York Division, 21 miles, 4-track line, $145,360. Per mile, $6,922. Per track, $1,755.

1900. West Jersey & Seashore Railroad steam line, 58 miles, 2-track line, $140,670. Per mile, $2,425. Per track, $1,212.

Electropneumatic signals, direct current, lower quadrant, bracket posts.

1901. K tower, Philadelphia, to Rosemont, Philadelphia Division, 9 miles, 4-track line, $82,809. Per mile, $9,201. Per track, $2,300.

Rosemont to Paoli, Philadelphia Division, 9 miles, 4-track line, $93,161. Per mile, $10,351. Per track, $2,588.

1903. Philadelphia to Wilmington, Philadelphia, Baltimore & Washington Railroad, 22 miles, 4-track line, $177,072. Per mile, $8,049. Per track, $2,012.

1903. Paoli to Downingtown, Philadelphia Division, 12 miles, 4-track line, $82,170. Per mile, $6,847. Per track, $1,712.

1906. Downingtown to Atglen, Philadelphia Division, 19 miles, 4-track line, $123,641. Per mile, $6,507. Per track, $1,627.

Direct-current motor, lower quadrant signals, direct current track circuits.

1903. Perth Amboy & Woodridge Railroad, 6.7 miles, 2-track line, $10,035. Per road mile, $1,498. Per track mile, $749.

1906. West Jersey & Seashore Railroad electric line, alternating current track circuit, electropneumatic signals, lower quadrant, 36 miles, 2-track line, $480,953. Per road mile, $13,359. Per track mile, $6,679. These figures include rebuilding old interlockings and building some new interlockings in this territory.

Alternating current, upper quadrant motor signals, alternating current track circuits, power line underground.

1912–13. Branch intersection to Harrisburg, 10 miles, 4-track line, $128,508. Per road mile, $12,850. Per track mile, $3,212.

Atglen to Dillerville, Philadelphia Division, 21.5 miles, 4-track line, $233,012. Per road mile, $10,837. Per track mile, $2,709.

Huntingdon to Elizabeth Furnace, Middle Division, 29.7 miles, 4-track line, $415,380. Per road mile, $13,648. Per track mile, $3,412.

Rockville to Iroquois, Middle Division, 16 miles, 4-track line, $261,666. Per road mile, $16,354. Per track mile, $4,088.

Wilmington to Oakington, Oakington to Bay View and Baltimore to Washington, Philadelphia, Baltimore & Washington Railroad, 100 miles. Principally 2-track line, some little 3-track stretches, $872,493. Per road mile, $8,725. Per track mile, $4,362.

POSITION LIGHT SIGNALS.

1916. Philadelphia to Paoli, "OB" to "PA," 16 miles, 4-track line, $355,000. Per road mile, $22,187. Per track mile, $5,547.

Mr. CULLOP. How far apart are the blocks on your main line?

Mr. ATTERBURY. From 4,500 to 6,200 feet, depending upon the conditions as to grades, density of traffic, etc. I am talking about the automatic system.

Mr. CULLOP. The automatic block system?

Mr. ATTERBURY. Yes, sir; I thought your question was directed to that.

Mr. CULLOP. As to the other block system——

Mr. ATTERBURY (interposing). On some portions of our line, we have manual-controlled blocks. For instance, on the portion of our line confined entirely to freight, where there is no passenger business, we have blocks as long as 13 miles on our railroad. On passenger and freight lines they will extend about 5 miles—that is, our manual blocks extend that far, and in between those manual blocks, we have automatic signals and at the end of those 5 mile stretches we have our manual-controlled blocks, with interlocking crossover switches, etc.

Mr. ESCH. You have been trying out the automatic-stop system?

Mr. ATTERBURY. We have tried the automatic stop out on our New York terminal, Mr. Esch, much on the lines of the automatic stop in use on the Interborough and the Metropolitan. We have not tried it out where we were not in a position to maintain that efficient control of the maintenance that is absolutely essential to its successful operation.

Mr. ESCH. Did you not try out the automatic-stop system near Pittsburgh?

Mr. ATTERBURY. I can not say that we have, Mr. Esch. We may have done so on our western lines. I do know that there has been no satisfactory train stop submitted to me by our signal officers, and there are no better signal officers in the country than those of the Pennsylvania Railroad. In fact, there are none better in the world. The signal officers of the United States are far ahead of Germany, France, or England in the art of signal development. We brought the first interlocking machine from England and tried it out on the Pennsylvania Railroad, and since that time the American signalmen have advanced more rapidly than have our foreign friends. When our signal people say there is nothing as yet successfully developed, you can depend upon it they know what they are talking about. We are looking for a successful train stop, and when we find that—and some day I have no doubt we will—we will try it out, and then we will be in position to say whether or not it is worth the cost.

Mr. ESCH. I know some inventors of these automatic stops complain that the carriers do not give them encouragement by trying them out; is there any truth in that?

Mr. ATTERBURY. I have no doubt, Mr. Esch, that every man who has a patent and who can not get favorable consideration of his idea by somebody who will put up the money to develop his patent, is much aggrieved and feels that he has not been recognized; and no doubt that the same is true of people who have train-control patents.

Mr. ESCH. You think section 4 can be eliminated if sections 8, 9, and 10 remain?

Mr. ATTERBURY. Yes, sir.

Mr. ESCH. What do you think of section 5?

Mr. ATTERBURY. I would eliminate the whole thing. You will realize that the Pennsylvania Railroad is to-day properly equipped. I have already told you about our automatic system and manual block, but notwithstanding the fact that we are properly equipped, if section 5 stays in we can not operate.

Mr. ESCH. Section 5?

Mr. ATTERBURY. Yes. It will tie up our railroad to-day.

Mr. ESCH. Because it is not flexible enough?

Mr. ATTERBURY. Because it gives a description of a block system which is absolutely in opposition to the description of the American Railway Association and the regulations under which our block-signal system has been developed.

Mr. ESCH. That is the definition of the Interstate Commerce Comsion.

Mr. ATTERBURY. Do you want me to say what I think?

Mr. ESCH. I have no objection.

Mr. STEPHENS. Certainly; why not?

Mr. ESCH. I have no objection.

Mr. ATTERBURY. It simply shows how absolutely impossible it is for any seven men to take even so simple a matter as the block system and make up a regulation that will be so comprehensive as to be effective and at the same time not kill. Now, that regulation kills. The American Railway Association, which is the governing railroad body of the country, has a set of train rules and block-system regulations that are all that is necessary. It is not necessary for this description of a block system.

Mr. DEWALT. You say it kills; tell us why it kills. Your mere assertion is not proof.

Mr. ATTERBURY. It reads:

> And assured that the track on which the train is to proceed has been cleared of all other trains for a definite distance and will continue clear as may be prescribed by the rules and regulations of the carrier; the methods and rules to be such as to protect a train on a single-track railroad from head-on and rear-end collisions with other trains.

Mr. ESCH. Of course, that is merely for the ordinary operation of trains and probably does not contemplate an accident or an emergency like a wreck within a block. Do you think the commission would penalize a road for sending a wrecking train into a block to relieve a wreck which has occurred between blocks?

Mr. ATTERBURY. Well, Mr. Esch, the commission is in this position: They are being subjected, I have no doubt, every day to floods of complaints from interested people, and the Interstate Commerce Commission must take some notice of those complaints. They will have to investigate——

Mr. ESCH (interposing). Surely.

Mr. SIMS. You have not explained to the lay mind why those words kill. You have used the expression that "it kills."

Mr. DEWALT. He was diverted by Mr. Esch.

Mr. ESCH. Yes; I beg your pardon.

Mr. ATTERBURY. The permissive blocking is essential at sections of every part of our line. The proposed regulations contemplate

ere shall be at all times but one train in one block at one time. ›w, what we call closing in, which we have under very good control th our automatics and our interlockings, will be prevented by the plication of this regulation. For instance, a man comes to an tomatic signal, the signal is against him, his instructions are to stop d then to proceed looking for broken rail, train ahead, or for some ıer obstruction, and he proceeds. That permits the closing in of ıins, and that is as true of freight as it is of passenger. That per- ts the closing in of trains; otherwise those trains may be distributed ck and block up the very running tracks that we may need to tour other trains around either a wrecked train or some obstruction the track.

Mr. SIMS. You mean by the words "closing in" that more trains ı be put in the block than one?

Mr. ATTERBURY. Yes.

Mr. STEPHENS. In other words, if there was an arbitrary rule there ght be 10 trains at different points 10 blocks behind?

Mr. ATTERBURY. Exactly.

Mr. STEPHENS. And you would have 50 miles of your track strung with trains instead of having them all in one block?

Mr. ATTERBURY. You have it quite right, Mr. Stephens. Then I not see how we would get into any of our terminals. Now the nmon practice on stub tracks is to have what we call bumper cars. r instance, at the Broad Street Station, on one of our locals, if it ppens to be a theater afternoon or something of that sort, the train y go out with 4, 5, 6, 7, or even 8 cars, and we have to provide nper cars on all of our tracks, so that the conductor can cut off a tain number of cars to fill the requirements. Now we can give a ar signal into that track, if there are no cars on that track, but if it happens that there are two cars or three cars in on that track, then give a green signal, and the engineer goes in on that track knowing l well that the end of the track is occupied and he looks out for that. der this regulation we could not do that.

Mr. STEPHENS. You could not run him in there at all?

Mr. ATTERBURY. No; we could not get him in there at all.

Mr. ESCH. In other words, your objection would be met if we pro- ed in that section for permissive blocking?

Mr. ATTERBURY. My objection, Mr. Esch, is why go to the Inter- te Commerce Commission's description of a block signal system? at is authorized by the American Railway Association, which is association that is behind railroad operation, and that is the ociation that we all look up to. The train rules of the American ilway Association are practically uniform all over the country.

Mr. DEWALT. Mr. Atterbury, in what material respect does the ıerican association's description differ from this one?

Mr. ATTERBURY. Unfortunately I have not a copy of that, but rill be very glad to submit it in written form.

Mr. ESCH. Put it in your testimony.

Mr. ATTERBURY. I will be very glad to do so.

THE STANDARD CODE OF THE AMERICAN RAILWAY ASSOCIATION.

Block Signal Rules.

]Adopted November 17, 1915. Published by The American Railway Association, 75 Church Street, New York, January, 1916.]

General Note.—Blanks in the rules may be filled by each railroad to suit its own organization or requirements.

DEFINITIONS.

Block.—A length of track of defined limits, the use of which by trains is governed by block signals.

Block station.—A place from which block signals are operated.

Fixed signal.—A signal of fixed location, indicating a condition affecting the movement of a train.

Block signal.—A fixed signal governing the use of a block.

Home block signal.—A fixed signal at the entrance of a block to govern trains in entering and using that block.

Distant block signal.—A fixed signal used in connection with a home block signal to govern the approach thereto.

Block system.—A series of consecutive blocks.

Manual block system.—A series of consecutive blocks, governed by block signals operated manually, upon information by telegraph, telephone, or other means of communication.

Controlled manual block system.—A series of consecutive blocks governed by block signals, controlled by continuous track circuits, operated manually upon information by telegraph, telephone or other means of communication, and so constructed as to require the cooperation of the signalmen at both ends of the block to display a clear or a permissive block signal.

Automatic block system.—A series of consecutive blocks governed by block signals operated by electric, pneumatic or other agency actuated by a train, or by certain conditions affecting the use of a block.

Manual Block System.

REQUISITES OF INSTALLATION.

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.
2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.
3. Signals located preferably over or upon the right[1] of an adjoining track to which they refer. For less than three tracks signals for trains in each direction may be on the same signal mast.
4. Semaphore arms that govern, displayed to the ———[2] of the signal mast as seen from an approaching train.
5. The normal indication of home block signals—stop.

ADJUNCTS.

The following may be used:

A. Distant block signals interlocked with home block signals; normal indication—caution.

C. Repeaters, audible or visible, to indicate the position of block signals to the signalman operating them.

D. The automatic release of block signals to display their most restrictive indication.

E. The locking of switches with block signals.

F. Track circuits.

H. Lock indicators for main track switches.

J. Take siding indicators.

K. Means of communication between block stations and outlying switches.

L. The locking of telegraph keys with block signals.

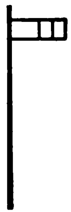
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[1] Where a railroad is operated with the current of traffic to the left the block signals may be placed upon the left.

[2] Right or left.

RULES.

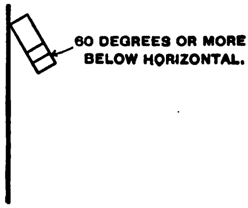
301 THREE-POSITION BLOCK SIGNALS.

(The aspects shown are typical and may be given in any one of the other quadrants. Each road should show the aspects and colors of lights it uses.) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. *(Not to be printed in the Rules for Enginemen and Trainmen.)* Signal will appear when—
301 A.  INDICATION—STOP. NAME—STOP-SIGNAL.	Block is not clear.
301 C.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	Block is clear.
301 B.  INDICATION—PROCEED WITH CAUTION PREPARED TO STOP SHORT OF TRAIN OR OBSTRUCTION. NAME—PERMISSIVE-SIGNAL.	Block is occupied.

302. TWO-POSITION HOME BLOCK SIGNALS.

(The aspects shown are typical. Each road should show the aspects and colors of lights it uses.) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. *(Not to be printed in the Rules for Enginemen and Trainmen.)* Signal will appear when—
302 A.  INDICATION—STOP. NAME—STOP-SIGNAL.	Block is not clear.

302 C.



INDICATION—PROCEED.

NAME—CLEAR-SIGNAL.

Block is clear.

303. TWO-POSITION DISTANT BLOCK SIGNALS.

(*The aspects shown are typical. Each road should show the aspects and colors of lights it uses.*)

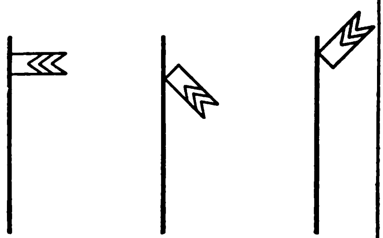
The following signals will appear where conditions require their use:

REQUISITES OF INSTALLATION.

(*Not to be printed in the Rules for Enginemen and Trainmen.*)

Signal will appear when—

303 J.

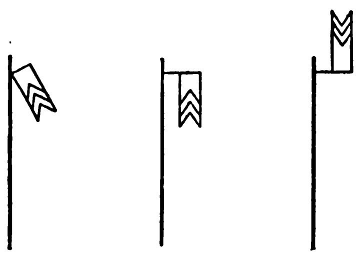


INDICATION—APPROACH HOME SIGNAL WITH CAUTION.

NAME—CAUTION-SIGNAL.

Home signal is not clear.

303 K.



INDICATION—PROCEED.

NAME—CLEAR-SIGNAL.

Home signal indicates proceed.

NOTE TO RULE 303.—Where distant block signals are not used rule 303 will be omitted.

305. Block signals govern the use of the blocks, but, unless otherwise provided, do not supersede the superiority of trains; nor dispense with the use or the observance of other signals whenever and wherever they may be required.

306. When a block station is open at an irregular hour, trains must be notified by train order or by special instructions, and special precautions must be taken to call the attention of trains approaching such block station to the indications of the block signals.

SIGNALMEN.

311. The normal indication of home block signals—stop; of distant block signals—caution.

312. Signals must be operated carefully and with a uniform movement. If a signal fails to work properly its operation must be discontinued and the signal secured so as to display its most restrictive indication until repaired.

313. Signalmen must observe, as far as practicable, whether the indications of the signals correspond with the positions of the levers.

314. Signalmen must not make nor permit any unauthorized repairs, alterations, or additions to the apparatus.

315. A block record must be kept at each block station.

316. COMMUNICATING CODE.

1—Display stop signal.
13—I understand.
17—Display stop signal. Train following.
2—Block clear.
3—Block wanted for train other than passenger.
36—Block wanted for passenger train.
4—Train other than passenger has entered block.
46—Passenger train has entered block.
5—Block is not clear of train other than passenger.
56—Block is not clear of passenger train.
7—Train following.
8—Opening block station. Answer by record of trains in the extended block.
9—Closing block station. Answer by 13.

When two or more tracks are used in the same direction, signalmen in using the communicating code must also specify the track.

317A. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "1 for ———" to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the stop signal to opposing trains, and reply "2 for ———." If the block is not clear, he must reply "5 of ———," or "56 of ———." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in rule 332 or by train order.

317B. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give "1 for ———" to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the stop signal to opposing trains and reply "2 for ———." If the block is not clear, he must reply "5 of ———," or "56 of ———." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block which is occupied by an opposing train or by a passenger train, except as provided in rule 332 or by train order.

To permit a train to follow a train other than a passenger train into a block, the signalman must give "17 for ———" to the next block station in advance. The

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NOTE TO RULE 311.—Where distant block signals are not used the words "of distant block signals—caution" will be omitted.

NOTE TO RULE 315.—The different items to be entered on the block record have not been prescribed in this rule, but it has been left to each railroad to complete the rule by adding such items as may be necessary to meet the conditions governing its traffic.

NOTE TO RULE 316.—Additions to the communicating code may be made if desired. When the telephone is used the code will be used without the numerals.

NOTE TO RULE 317A.—317 A is for absolute block for following and opposing movements on the same track.

NOTES TO RULE 317B.—

Rule 317 B is for absolute block for opposing movements, and permissive block for following movements on the same track.

signalman receiving this signal, if there is no passenger train in the block, must reply "5 of ——— 13 for ———." The approaching train will then be admitted to the block ———.[1]

318A. To admit a train to a block the signalman must examine the block record and if the block is clear give "3 for ———," or "36 for ———," to the next block station in advance. The signalman receiving this signal, if the block is clear, must reply "2 for ———." If the block is not clear, he must reply "5 of ———," or "56 of ———." The signalman at the entrance of the block must them display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in rule 332 or by train order.

318B. To admit a train to a block the signalman must examine the block record, and if the block is not occupied by a passenger train give "3 for ———," or "36 for ———," to the next block station in advance. The signalman receiving this signal, if the block is clear, must reply "2 for ———." If the block is not clear he must reply "5 of ———," or "56 of ———." The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block which is occupied by a passenger train, except as provided in rule 332 or by train order.

A train may be permitted to follow a train other than a passenger train into a block ———.[1]

319. When a train enters a block the signalman must give "4 ———," or "46 ———" and the time to the next block station in advance, and when the train has passed the home block signal and the signalman has seen the markers he must display the stop signal, and when the rear of the train has passed ——— feet beyond the home block signal he must give the record of the train to the next block station in the rear.

This information must be entered on the block records.

320. Unless otherwise provided, signalmen must not ask for the block until they have received a report of the train from the next block station in the rear.

321. Signalmen must observe all passing trains and note whether they are complete and in order, and the markers properly displayed.

322. Should a train pass a block station with any indication of conditions endangering the train or a train on another track, the signalman must immediately notify the signalman at the next block station in advance, and each must display stop signals to all trains that may be affected and must not permit any train to proceed until it is known that its track is not obstructed.

323. Should a train pass a block station without markers the signalman must notify the signalman at the next block station in each direction and must not report that train clear of the block until he has ascertained that the train is complete.

324. Should a train pass a block station in two or more parts the signalman must stop all trains moving in the same direction and notify the signalman at the next block station in advance. A signalman having received this notice must stop all trains moving in the opposite direction. The stop signal must not be displayed to the engineman of the parted train if the train can be admitted to the block in avdance under block signal rules; but the train-parted signal must be given. Should a train in either direction be stopped it may be permitted to proceed when it is known that its track is not obstructed.

325. A signalman informed of any obstruction in a block must immediately notify the signalman at the other end of the block, and each must display stop signals to all trains that may be affected and must not permit any train to proceed until it is known that its track is not obstructed.

326. When a train takes a siding, the signalman must know that it is clear of the block before giving two or displaying a clear signal for that block.

The signalman must obtain control of the block before permitting a train on a siding to reenter the block.

327. To permit a train to cross over or return, unless otherwise provided, the signalman must examine the block record; and if all the blocks are clear of approaching trains he must arrange with the signalman at the next block station in each direction to protect the movement, and when the proper signals have been displayed

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[1] Under permissive signal or with permissive card (Form C).

NOTE TO RULE 318A.—Rule 318A is for absolute block for following movements only.
NOTES TO RULE 318B.—
Rule 318B is for permissive block for following movements only.
NOTE TO RULES 317A, 317B, 318A, AND 318B.—Where it is desired that train dispatchers shall control the display of block signals, railroads may modify rules 317A, 317B, 318A, and 318B so as to provide for such practice.
NOTE TO RULES 317A, 317B, 318,A 318B, AND 319.—The blanks in rules 317A. 317B, 318A, 318B, and 319 are to be filled by the number or designation of the train, except as otherwise noted.

permission may be given. Until the block is clear no train must be admitted in the direction of the cross-over switches except under permissive signal or with permissive card (Form C).

All cross-over movements must be entered on the block records.

328. When coupled trains are separated, as prescribed by rule 364, the signalman must regard each portion as an independent train.

329. If necessary to stop a train for which a clear or permissive home-block signal has been displayed and accepted, the signalman must give hand signals in addition to displaying the stop signal.

330. A signalman having train orders for a train must display the block signal at "Stop." He may permit trains so stopped to proceed under block-signal rules after complying with rules for movement by train orders.

331A. If from the failure of block-signal apparatus the block signal can not be changed from the normal indication, a signalman, having information from the signalman at the next block station in advance that the block is clear, may admit a train to the block by the use of clearance card (Form A).

331B. If from the failure of block-signal apparatus the block signal can not be changed from the normal indication, a signalman having information from the signalman at the next block station in advance that the block is clear may admit a train to the block by the use of clearance card (Form A).

If the block is occupied by a train other than an opposing train or a passenger train, the signalman may admit a following train by the use of permissive card (Form C).

332. If from any cause a signalman is unable to communicate with the next block station in advance, he must stop all trains approaching in that direction. Should no cause for detaining a train be known, it may then be permitted to proceed with caution card (Form B), provided ——— minutes have elapsed since the passage of the last preceding train.

333. Signalmen must have the proper appliances for hand signaling ready for immediate use. Hand signals must not be used when the proper indication can be displayed by the block signals, except as prescribed by rule 329 or 343. When hand signals are necessary, they must be given from such a place and in such a way that there can be no misunderstanding on the part of enginemen or trainmen as to the signals or as to the train or engine for which they are given.

334. Block signals for a track apply only to trains moving with the current of traffic on that track. Signalmen will use ——— for blocking trains moving against the current of traffic.

335. Signalmen will be held responsible for the care of the block station, lamps, and supplies; and, unless otherwise provided, of the signal apparatus.

336. Lights in block stations must be so placed that they can not be seen from approaching trains.

337. Lights must be used upon all block signals from sunset to sunrise and whenever the signal indications can not be clearly seen without them.

338. If a train overruns a stop signal, the fact must be reported to ———.

339. If a stop signal is disregarded the fact must be reported to the next block station in advance and then to ———.

340. To open a block station the signalmen must give 8 to the next block station in each direction and record the trains that are in the extended block. He must then display the normal signal indication and notify the next block station in each direction that the block station is open.

When trains, which were in the extended block when the block station was opened and which had passed his block station before it was opened, clear the block in advance he must repeat the record to the block station in the rear.

341. A block station must not be closed except upon authority of ———.

342. Unless otherwise provided, a block station must not be closed until the block in each direction is clear of all trains.

To close a block station, the signalman must give 9 to the next block station in each direction, and when he receives 13 enter it on his block record, with the time it is received from each block signal.

The block signals must then be ———, all lights extinguished, and the block wires arranged to work through the closed block station.

343. When a block station is open at an irregular hour, signalmen must use hand signals, in addition to block signals, to give the required indications until all trains passed which have not been notified by train order or by special instructions that

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NOTE TO RULE 331A.—Rule 331A is for absolute block.

NOTE TO RULE 331B.—Rule 331B is for permissive block.

NOTE TO RULE 333.—Hand signaling includes the use of lamp, flag, torpedo, and fusee signals.

NOTE TO RULE 334.—Each railroad may fill in the blank in rule 334 with the kind of signals that are to be displayed or with the form of card to be used by the signalmen.

the block station is open. Signalmen must take special precautions to call the attention of trains approaching the block station to the indications of the block signals.

344. Signalmen must not permit unauthorized persons to enter the block station.

ENGINEMEN AND TRAINMEN.

361. Block signals for a track apply only to trains moving with the current of traffic on that track. ——— will be used for blocking trains moving against the current of traffic.

362. Trains must not pass a stop signal without receiving clearance card (Form A), caution card (Form B), permissive card (Form C), or a train order authorizing them to do so.

363. Trains must not proceed on hand signals as against block signals.

364. Unless otherwise directed, when two or more trains have been coupled and so move past any block station, they must be separated only at a block station and the signalman notified.

365. When a train takes a siding it must not again enter the block without the permission of the signalman.

A train having passed beyond the limits of a block must not back into that block without permission from the signalman.

366. Unless otherwise provided, when it is necessary for a train to cross over, the signalman must be notified and permission obtained before crossing over or returning.

367. The engineman of a train which has parted must sound the whistle signal for train parted when approaching a block station.

368. An engineman receiving a train parted signal from a signalman must answer by the whistle signal for train parted.

369. When a parted train is recoupled the signalman must be notified.

370. If there is an obstruction between block stations notice must be given to the nearest signalman.

371. If a train is stopped by a block signal the conductor and engineman must immediately ascertain the cause.

372. Conductors must report to ——— any unusual detentions at block stations.

373. A block station must not be considered as closed, except as provided for by time table or special instructions.

(To be printed on white paper.)

FORM A.

(Name.)
....Company.

CLEARANCE CARD.

Dover 9.15 A. M. November 17 15
....19......

No. 12
Conductor and Engineman..........

3 No No further
I have.................................orders for your train.

for extra 452 Can not be cleared
Stop signal is displayed...

Clear
Block..............................

John Jones
....
Operator.

This does not affect any orders you may have received.

Conductor and engineman must each have a copy, and see that their train is correctly designated in the above form.

Where clearance card, Form A, is used when the block is not clear, the line giving block indication will be left blank, and permissive card, Form C, used in addition to Form A.

(See rules 331 A, 331 B, and 362.)

NOTE TO RULE 361.—Each railroad may fill in the blank in rule 361 with the kind of signals that are to be displayed or the form of card to be used by the signalmen.

(To be printed on green paper.)

FORM B.

Name.

....Company.

CAUTION CARD.

BLOCK STATION ....; ....M., ..., 191 .

To Engineman,[1] train .... on .... track:

This card is authority to pass stop signal for .... track. You may proceed with caution. Signal indicates stop on account of ....

....

....

..............................., *Signalman.*

Enginemen [1] receiving this card properly filled in and signed by the signalman, may proceed with the train under control prepared to stop short of any obstruction.

When Form B is used on account of failure of means of communication, this card must be delivered to the signalman at the next block station in advance, and the engineman must personally obtain from the signalman permission to proceed.

[1] On railroads where it is desired to give caution cards to the conductor, the word "conductor" may be incorporated in the form.

(See Rules 332 and 362.)

(To be printed on pink paper.)

FORM C.

Name.

....Company.

PERMISSIVE CARD.

BLOCK STATION ....; ....M., ..., 191 .

To Engineman,[1] train .... on .... track:

Proceed, expecting to find a train in the block between this station and .....

....

..............................., *Signalman.*

Form C may be used when a stop signal is displayed and it is permissible to admit a following train to the block.

Enginemen [1] receiving this card will proceed as indicated.

[1] On railroads where it is desired to give permissive cards to the conductor, the word "conductor" may be incorpotated in the form.

(See rules 317 B, 318 B, 327, 331 B, and 362.)

Controlled Manual Block System.

REQUISITES OF INSTALLATION.

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.
2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.
3. Signals located preferably over or upon the right [1] of and adjoining the track to which they refer.
4. Semaphore arms that govern, displayed to the ——— [2] of the signal mast as seen from an approaching train.
5. The normal indication of home block signals—stop.
6. Continuous track circuits.
11. The automatic release of block signals to display their most restrictive indication.

ADJUNCTS.

The following may be used:

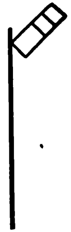
A. Distant block signals interlocked with home block signals; normal indication—caution.
C. Repeaters, audible or visible, to indicate the position of block signals to the signal man operating them.
E. The locking of switches with block signals.
H. Lock indicators for main track switches.
J. Take siding indicators.
K. Means of communication between block stations and outlying switches.

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[1] Where a railroad is operated with the current of traffic to the left the block signals may be placed upon the left.
[2] Right or left

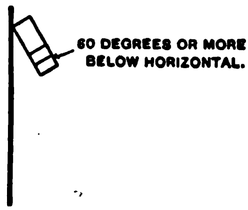
RULES.

401 THREE-POSITION BLOCK SIGNALS

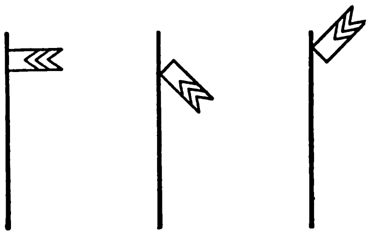
(*The aspects shown are typical and may be given in any one of the other quadrants. Each road should show the aspects and colors of lights it uses.*) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
401 A.  INDICATION—STOP. NAME—STOP-SIGNAL.	Block is not clear.
401 C.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	Block is clear.
401 G.  INDICATION—PROCEED WITH CAUTION PREPARED TO STOP SHORT OF TRAIN OR OBSTRUCTION. NAME—PERMISSIVE-SIGNAL.	Block is occupied.

402. TWO-POSITION HOME BLOCK SIGNALS.

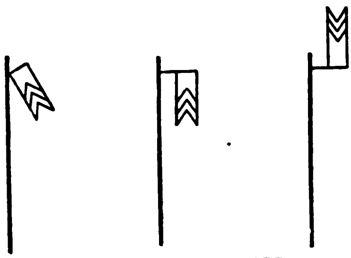
(*The aspects shown are typical. Each road should show the aspects and colors of lights it uses.*) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
402 A.  INDICATION—STOP. NAME—STOP-SIGNAL.	Block is not clear.

402 C.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	**Block is clear.**

403. TWO-POSITION DISTANT BLOCK SIGNALS.

(*The aspects shown are typical. Each road should show the aspects and colors of lights it uses.*) The following signals will appear where conditions require their use :	REQUISITES OF INSTALLATION. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
403 J.  INDICATION—APPROACH HOME SIGNAL WITH CAUTION. NAME—CAUTION-SIGNAL.	**Home signal is not clear.**

NOTE TO RULE 403.—Where Distant Block Signals are not used Rule 403 will be omitted.

403 K.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	**Home signal indicates proceed.**

NOTE TO RULE 403.—Where distant block signals are not used rule 403 will be omitted.

405. Controlled manual block signals govern the use of the blocks, and, unless otherwise provided, their indications supersede time-table superiority and take the place of train orders; they do not dispense with the use or the observance of other signals whenever and wherever they may be required.

406. When a block station is open at an irregular hour, trains must be notified by train order or by special instructions, and special precautions must be taken to call the attention of trains approaching such block station to the indications of the block signals.

SIGNALMEN.

411. The normal indication of home block signals—stop; of distant block signals—caution.

412. Signals must be operated carefully and with a uniform movement. If a signal fails to work properly, its operation must be discontinued and the signal secured so as to display its most restrictive indication until repaired.

413. Signalmen must observe, as far as practicable, whether the indications of the signals correspond with the position of the levers.

414. Signalmen must not make or permit any unauthorized repairs, alterations, or additions to the apparatus.

415. A block record must be kept at each block station.

416. COMMUNICATING CODE.

1—Display stop signal.
13—I understand.
17—Display stop signal. Train following.
2—Block clear.
3—Block wanted for train other than passenger.
36—Block wanted for passenger train.
4—Train other than passenger has entered block.
46—Passenger train has entered block.
5—Block is not clear of train other than passenger.
56—Block is not clear of passenger train.
7—Train following.
8—Opening block station. Answer by 2, 5, or 56.
9—Closing block station, followed by 2.
If the block is clear, to be answered by 13, followed by 2.
If the block is not clear, to be answered by 5 or 56.

When two or more tracks are used in the same direction, signalmen in using the communicating code must specify the track.

417 A. To admit a train to a block, signalman must examine the block record, and if the block is clear, give 1 to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the stop signal to opposing trains, unlock the next block station in the rear and reply 2. If the block is not clear, he must reply 5 or 56. The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in rule 432 or by train order.

417 B. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give 3 or 36 to the next block station in advance. The signalman receiving this signal, if the block is clear, must display the stop signal to opposing trains, unlock the next block station in the rear and reply 2. If the block is not clear, he must reply 5 or 56. The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block which is occupied by an opposing train or by a passenger train, except as provided in rule 432 or by train order.

NOTE TO RULE 411.—Where distant block signals are not used the words "of distant block signals—caution" will be omitted.

NOTE TO RULE 415.—The different items to be entered on the block record have not been prescribed in this rule, but it has been left to each railroad to complete the rule by adding such items as may be necessary to meet the conditions governing its traffic.

NOTE TO RULE 416.—Additions to the communicating code may be made if desired. When the telephone is used, the code will be used without the numerals.

NOTE TO RULE 417 A.—417 A is for absolute block for following and opposing movements on the same track.

NOTES TO RULE 417 B.—
Rule 417 B is for absolute block for opposing movements, and permissive block for following movements on the same track.

To permit a train to follow a train other than a passenger train into a block, the signalman must give 17 to the next block station in advance. The signalman receiving this signal, if there is no passenger train in the block, must unlock the next block station in the rear and reply 5. The approaching train will then be admitted to the block ———.[1]

418 A. To admit a train to a block, the signalman must examine the block record, and, if the block is clear, give 3 or 36 to the next block station in advance. The signalman receiving this signal, if the block is clear, must unlock the next block station in the rear and reply 2. If the block is not clear, he must reply 5 or 56. The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block unless it is clear, except as provided in rule 432, or by train order.

418 B. To admit a train to a block, the signalman must examine the block record, and, if the block is not occupied by a passenger train, give 3 or 36 to the next block station in advance. The signalman receiving this signal, if the block is clear, must unlock the next block station in the rear and reply 2. If the block is not clear, he must reply 5 or 56. The signalman at the entrance of the block must then display the proper signal indication.

A train must not be admitted to a block which is occupied by a passenger train, except as provided in rule 432 or by train order.

A train may be permitted to follow a train other than a passenger train into a block ———.[1]

419. When a train enters a block the signalman must give 4 or 46 to the next block station in advance, and when the train has passed the home block signal and the signalman has seen the markers he must display the stop signal, and when the rear of the train has passed the home block signal, he must, if the plock is then clear, give 2 to the next block station in the rear.

This information must be entered on the block records.

420. Unless otherwise provided, signalmen must not ask for the block until they have received a report of the train from the next block station in the rear, nor unlock the next block station in the rear until the block is asked for by that block station.

421. Signalmen must observe all passing trains and note whether they are complete and in order, and the markers properly displayed.

422. Should a train pass a block station with any indication of conditions endangering the train, or a train on another track, the signalman must immediately notify the signalman at the next block station in advance, and each must display stop-signals to all trains that may be affected, and must not permit any train to proceed until it is known that its track is not obstructed.

423. Should a train pass a block station without markers, the signalman must notify the signalman at the next block station in each direction, and must not report that train clear of the block nor unlock the next block station in the rear until he has ascertained that the train is complete.

424. Should a train pass a block station in two or more parts, the signalman must stop all trains moving in the same direction and notify the signalman at the next block station in advance. A signalman having received this notice must stop all trains moving in the opposite direction. The stop signal must not be displayed to the engineman of the parted train if the train can be admitted to the block in advance under block signal rules; but the train-parted signal must be given. Should a train in either direction be stopped, it may be permitted to proceed when it is known that its track is not obstructed.

425. A signalman informed of any obstruction in a block must immediately notify the signalman at the other end of the block, and each must display stop signals to all trains that may be affected and must not permit any train to proceed until it is known that its track is not obstructed.

426. When a train takes a siding the signalman must know that it is clear of the block before giving 2 or displaying a clear signal for that block.

The signalman must obtain control of the block before permitting a train on a siding to reenter the block.

427. To permit a train to cross over or return, unless otherwise provided, the signalman must examine the block record, and if all the blocks affected are clear of approach-

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[1] Under permissive signal or with permissive card (Form C).

NOTE TO RULE 418 A.—Rule 418 A is for absolute block for following movements only.

NOTES TO RULE 418 B.—

Rule 418 is for permissive block for following movements only.

NOTE TO RULES 417 A, 417 B, 418 A, AND 418 B.—Where it is desired that train dispatchers shall control the display of block signals, railroads may modify rules 417 A, 417 B, 418 A, and 418 B, so as to provide for such practice.

ing trains he must arrange with the signalman at the next block station in each direction to protect the movement, and when the proper signals have been displayed permission may be given. Until the block is clear no train must be admitted in the direction of the crossover switches except under permissive signal or with permissive card (Form C).

All crossover movements must be entered on the block records.

428. When coupled trains are separated, as prescribed by rule 464, the signalman must regard each portion as an independent train.

429. If necessary to stop a train for which a clear or permissive home block signal has been displayed and accepted, the signalman must give hand signals in addition to displaying the stop signal.

430. A signalman having train orders for a train must display the block signal at "Stop." He may permit trains so stopped to proceed under block-signal rules after complying with rules for movement by train orders.

431. If, from the failure of the block-signal apparatus, the block signal can not be changed from the normal indication, the signalman may admit a train to the block by the use of caution card (Form B).

432. If from any cause a signalman is unable to communicate with the next block station in advance, or if from the failure of the block-signal apparatus the block signal can not be changed from the normal indication, he must set his signal and other apparatus so as to display their most restrictive indication, stop all trains approaching in that direction, and be governed by instructions from the superintendent. If, at the same time, the signalman is unable to communicate with the superintendent, he will, after any train for which 2 or 13 had been given to the next block station in advance has cleared the block, permit regular trains to proceed on their time-table authority, with caution card (Form D) and under stop signal.

433. Signalmen must have the proper appliances for hand signaling ready for immediate use. Hand signals must not be used when the proper indication can be displayed by the block signals, except as prescribed in rule 429 or 443. When hand signals are necessary they must be given from such a place and in such a way that there can be no misunderstanding on the part of enginemen or trainmen as to the signals, or as to the train or engine for which they are given.

434. Block signals for a track apply only to trains moving with the current of traffic on that track. Signalmen will use ——— for blocking trains moving against the current of traffic.

435. Signalmen will be held responsible for the care of the block station, lamps and supplies; and, unless otherwise provided, of the signal apparatus.

436. Lights in block stations must be so placed that they can not be seen from approaching trains.

437. Lights must be used upon all block signals from sunset to sunrise and whenever the signal indications can not be clearly seen without them.

438. If a train overruns a stop signal, the fact must be reported to ———.

439. If a stop signal is disregarded, the fact must be reported to the next block station in advance and then to ———.

440. To open a block station the signalman must give 8 to the next block station in each direction and record the trains that are in the extended block. He must then display the normal signal indication and notify the next block station in each direction that the block station is open.

When trains which were in the extended block when the block station was opened and which had passed his block station before it was opened clear the block in advance he must repeat the record to the block station in the rear.

441. A block station must not be closed except upon authority of ———.

442. Unless otherwise provided, a block station must not be closed until the block in each direction is clear of all trains.

To close a block station, the signalman must give 9 to the next block station in each direction and when he receives 13 enter it on his block record, with the time it is received from each block station.

The block signals must then be ———, all lights extinguished, and the block wires and circuits arranged to work through the closed block station.

443. When a block station is open at an irregular hour, signalmen must use hand signals, in addition to block signals, to give the required indications until all trains have passed which have not been notified by train order or by special instructions

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NOTE TO RULE 431.—Rule 431 is for operation on two or more main tracks for following movements only.

NOTE TO RULE 432.—Rule 432 is for operation on single track.

NOTE TO RULE 433.—Hand signaling includes the use of lamp, flag, torpedo, and fusee signals.

NOTE TO RULE 434.—Each railroad may fill in the blank in rule 434 with the kind of signals that are to be displayed, or with the form of card to be used by the signalmen.

that the block station is open. Signalmen must take special precautions to call the attention of trains approaching the block station to the indications of the block signals.

444. Signalmen must not permit unauthorized persons to enter the block station.

ENGINEMEN AND TRAINMEN.

461. Block signals for a track apply only to trains moving with the current of traffic on that track. ——— will be used for blocking trains moving against the current of traffic.

462. Trains must not pass a stop signal without receiving caution card (Form B), permissive card (Form C), or a train order authorizing them to do so.

On single track regular trains receiving caution card (Form D) may proceed on their time-table authority expecting to find a train in the block, a broken rail, or a switch not properly set.

463. Train must not proceed on hand signals as against block signals.

464. Unless otherwise directed, when two or more trains have been coupled and so move past any block station, they must be separated only at a block station and the signalman notified.

465. When a train takes a siding it must not again enter the block without the permission of the signalman.

A train having passed beyond the limits of a block must not back into that block without permission from the signalman.

466. Unless otherwise provided, when it is necessary for a train to cross over, the signalman must be notified and permission obtained before crossing over or returning.

467. The engineman of a train which has parted must sound the whistle signal for train parted when approaching a block station.

468. An engineman receiving a train-parted signal from a signalman must answer by the whistle signal for train parted.

469. When a parted train is recoupled the signalman must be notified.

470. If there is an obstruction between block stations notice must be given to the nearest signalman.

471. If a train is stopped by a block signal the conductor and engineman must immediately ascertain the cause.

472. Conductors must report to ——— any unusual detention at block stations.

473. A block station must not be considered as closed, except as provided for by time-table or special instructions.

(To be printed on green paper.)

FORM B.

(Name.)

....Company.

CAUTION CARD.

BLOCK STATION, ...; ....M., ..., 191 .

To Engineman,[1] train .... on .... track.

This card is authority to pass stop signal for .... track. You may proceed with caution. Signal indicates stop on account of ....

....

....

............................*Signalman.*

Enginemen receiving this card properly filled in and signed by the signalman, may proceed with the train under control prepared to stop short of any obstruction.

When Form B is used on account of failure of means of communication, this card must be delivered to the signalman at the next block station in advance, and the engineman must personally obtain from the signalman permission to proceed.

[1] On railroads where it is desired to give caution cards to the conductor, the word "conductor" may be incorporated in the form.

(See Rules 431 and 462.)

NOTE TO RULE 461.—Each railroad may fill in the blank in rule 461 with the kind of signals that are to be displayed or the form of card to be used by the signalmen.

(To be printed on pink paper.)

FORM C.

(Name.)

.... Company.

PERMISSIVE CARD.

BLOCK STATION ....; .... M., ... 191 .

To Engineman,[1] train .... on .... track:

Proceed, expecting to find a train in the block between this station and ....

.............................., *Signalman.*

Form C may be used when a stop signal is displayed and it is permissible to admit a following train to the block.

Enginemen [1] receiving this card will proceed as indicated.

[1] On railroads where it is desired to give permissive cards to the conductor, the word "conductor" may be incorporated in the form.

(See Rules 417 B, 418 B, 427 and 462.)

(To be printed on yellow paper.)

FORM D.

(To be used only on single track.)

(Name.)

.... Company.

CAUTION CARD.

BLOCK STATION ....; .... M., ..., 191 .

To Engineman,[1] train ....:

Means of communication have failed. Signal can not be cleared. You may proceed with caution by stop signal, expecting to find a train in the block, broken rail, or switch not properly set.

.............................., *Signalman.*

When a block signal is also an interlocking signal, the signalman must know that the switches through the interlocking are properly set and locked before issuing this card.

Enginemen [1] of regular trains receiving this card, properly filled in and signed by the signalman, may proceed on their time-table authority and as directed above.

[1] On railroads where it is desired to give caution cards to the conductor, the word "conductor" may be incorporated in the form.

(See Rules 432 and 462.)

AUTOMATIC BLOCK SYSTEM.

REQUISITES OF INSTALLATION.

1. Signals of prescribed form, the indications given by not more than three positions; by lights of prescribed color; or by both.
2. The apparatus so constructed that the failure of any part controlling the operation of a signal will cause it to display its most restrictive indication.
3. Signals located preferably over or upon the right [1] of and adjoining the track to which they refer.
4. Semaphore arms that govern, displayed to the ——— [2] of the signal mast as seen from an approaching train.
6. Continuous track circuits.
7. Signal connections and operating mechanism so arranged that a home block signal will display the indications provided in rules 501 A, 501 AA, or 501 G after the front of a train shall have passed it.

[1] Where a railroad is operated with the current of traffic to the left the block signals may be placed upon the left.

[2] Right or left.

8. Switches in the main track so connected with the block signals that the home block signal in the direction of approaching trains will display the indications provided in rules 501 A, 501 AA, or 501 G when the switch is not set for the main track.

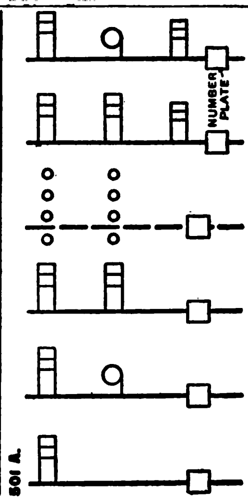
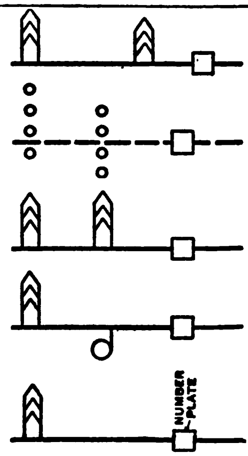
ADJUNCTS.

The following may be used:

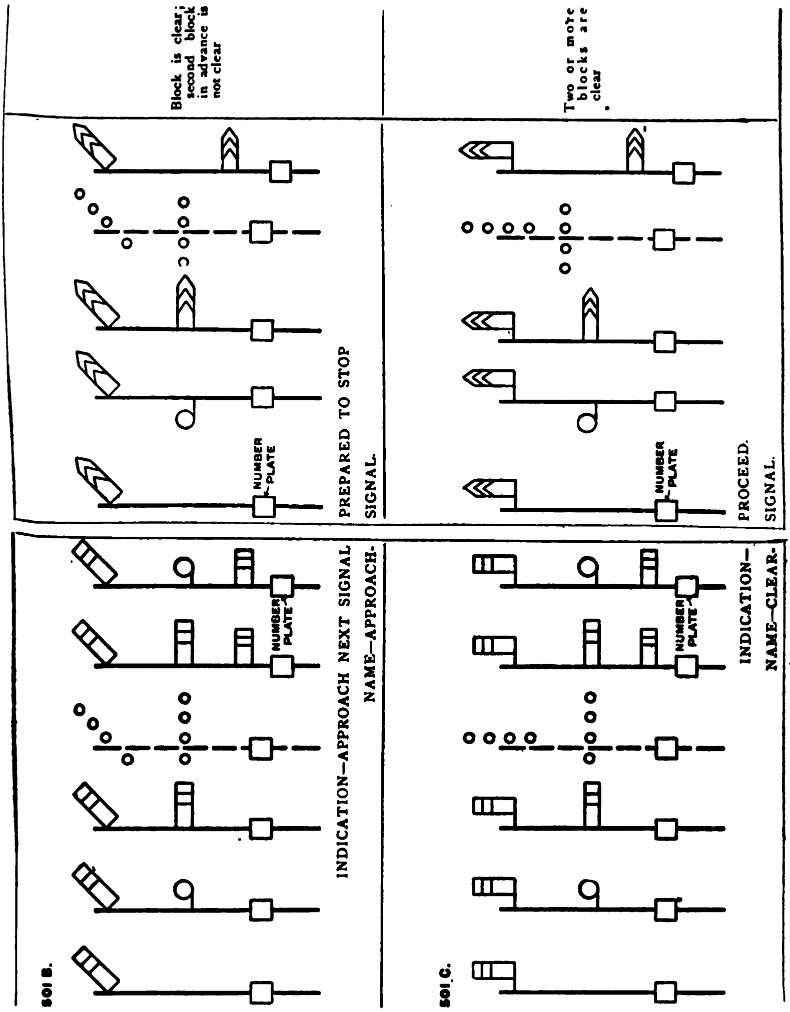
A. Distinct block signals connected with corresponding home block signals.
J. Take siding indicators.
S. Switch indicators for main track switches.
T. Automatic and train order signals interconnected.

RULES.

501 THREE-POSITION—BLOCK SIGNALS.

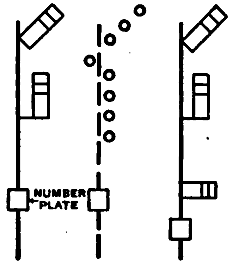
		Requisites of Installation. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
(The aspects shown are typical and may be given in any one of the colors of lights it uses.) The following signals will appear where conditions	*other quadrants. Each road should show the aspects and* require their use:	
501 A.  INDICATION—STOP. NAME—STOP-SIGNAL.		Block is not clear.
501 AA.	 INDICATION—STOP; THEN PROCEED. NAME—STOP AND PROCEED-SIGNAL.	Block is not clear.

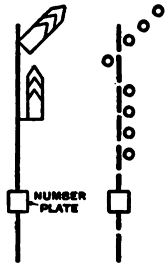
RULES—Continued.



RULES—Continued.

501 E.

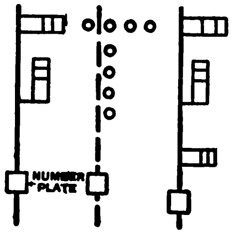




INDICATION—APPROACH NEXT SIGNAL AT RESTRICTED SPEED.
NAME—APPROACH-RESTRICTING-SIGNAL.

Two blocks are clear.

501 F.

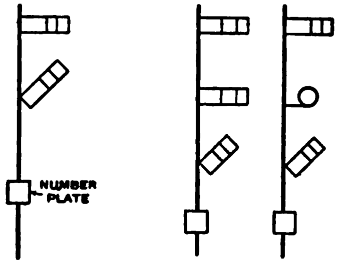


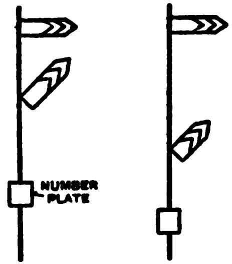
INDICATION—PROCEED AT RESTRICTED SPEED.
NAME—CLEAR-RESTRICTING-SIGNAL.

Two or more blocks are clear.

RULES—Continued.

501 G.



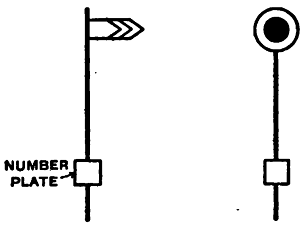


Block is occupied or switch is set to diverge.

INDICATION—PROCEED AT SLOW SPEED PREPARED TO STOP SHORT OF TRAIN OR OBSTRUCTION.

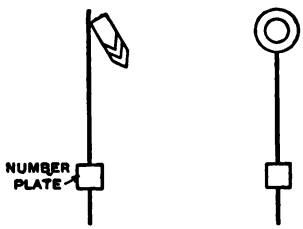
NAME—PERMISSIVE-SIGNAL.

(*The aspects shown are typical. Each road should show the aspects and colors of lights it uses.*) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
502 AA.	Block is not clear.



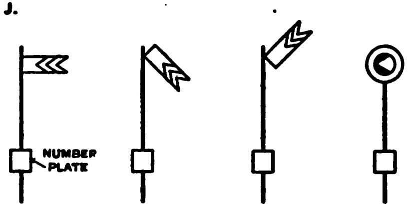
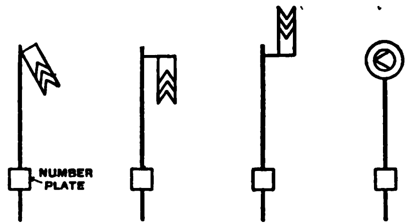
INDICATION—STOP; THEN PROCEED.
NAME—STOP AND PROCEED-SIGNAL.

502 C.	Block is clear.



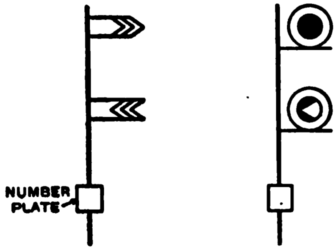
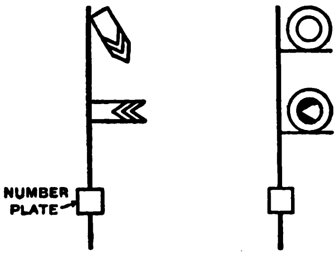
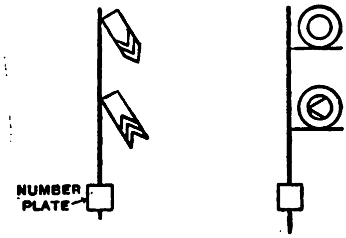
INDICATION—PROCEED.
NAME—CLEAR-SIGNAL.

503 TWO-POSITIONS DISTANT BLOCK SIGNALS.

	REQUISITES OF INSTALLATION.
(The aspects shown are typical. Each road should show the aspects and colors of lights it uses.) The following signals will appear where conditions require their use:	*(Not to be printed in the Rules for Enginemen and Trainmen.)* Signal will appear when—
503 J.  INDICATION—APPROACH HOME SIGNAL WITH CAUTION. NAME—CAUTION-SIGNAL.	Block is not clear or track is obstructed between distant and home signals.
503 K.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	Block is clear.

NOTE TO RULE 503.—Where Distant Block Signals are not used Rule 503 will be omitted.

504 TWO-POSITION HOME AND DISTANT BLOCK SIGNALS.

(*The aspects shown are typical. Each road should show the aspects and colors of lights it uses.*) The following signals will appear where conditions require their use:	REQUISITES OF INSTALLATION. (*Not to be printed in the Rules for Enginemen and Trainmen.*) Signal will appear when—
504 AA.  INDICATION—STOP; THEN PROCEED. NAME—STOP AND PROCEED-SIGNAL.	Block is not clear.
504 B.  INDICATION—APPROACH NEXT SIGNAL PREPARED TO STOP. NAME—APPROACH-SIGNAL.	Block is clear; second block in advance is not clear.
504 C.  INDICATION—PROCEED. NAME—CLEAR-SIGNAL.	Two or more blocks are clear.

505. Block signals govern the use of the blocks, but, unless otherwise provided, do not supersede the superiority of trains, nor dispense with the use or the observance of other signals whenever and wherever they may be required.

506. Lights must be used upon all block signals from sunset to sunrise and whenever the signal indications can not be clearly seen without them.

ENGINEMEN AND TRAINMEN.

508. Block signals for a track apply only to trains moving with the current of traffic on that track.

509. When a train is stopped by a stop signal it must stay until authorized to proceed, or in case of failure of means of communication it may proceed when preceded by a flagman to the next signal displaying a proceed indication.

When a train is stopped by a stop and proceed signal it may proceed—

(A) On single track ——.

(B) On two or more tracks at once at slow speed, expecting to find a train in the block, broken rail, obstruction or switch not properly set.

510. When a train is stopped by a block signal which is evidently out of order, and not so indicated, the fact must be reported to ——.

511. Both switches of a crossover must be open before a train starts to make a crossover movement, and the movement must be completed before either switch is restored to normal position.

512. Where switch indicators are used, the indications displayed do not relieve enginemen and trainmen from protecting their train as required by the rules.

Mr. SIMS. May I ask the gentleman to use language that the layman can understand? You speak of a bumper car and to me that conveys no information at all, and I could not tell anyone else about it.

Mr. ATTERBURY. Well, Mr. Sims, it is perfectly clear to you that it is not always possible to say whether a local train or a through train is going to have four cars, five cars, or six cars. That I think you can appreciate. Now if there are only people enough for four cars it is inefficient to take five.

Mr. SIMS. It is not necessary to take them.

Mr. ATTERBURY. Therefore if we have a train the ordinary set-up of which is four cars but which day before yesterday because it happened to be circus day ran seven cars, we have got to have three additional cars at the end of the track. The four cars of the train are at the front end of the track and the three cars that we may want to take are at the bumper end of the track and we call them bumper cars.

Mr. SIMS. You call them bumper cars by reason of their location in the station tracks?

Mr. ATTERBURY. Yes. We carry bumper cars on almost every track in our station because, for instance, one of our trains to New York may require one coach or two coaches, or it may require three coaches.

The CHAIRMAN. You have to leave some cars in reserve, so you can have them for use when necessary?

Mr. ATTERBURY. Yes, sir. For instance, our Atlantic City trains go out with 10 cars, but if it happens to be a cloudy day they go out with 7 cars. If it happens to be a beautiful, bright, sunshiny day, they go out with 13 cars.

Mr. DEWALT. That provision in section 5, however, says that the block on which the train is to proceed must have been cleared of all other trains. Now, scarcely could it be said that the language "all other trains" would include bumper cars, because bumper cars are not trains.

NOTE TO RULE 512.—Where switch indicators are not used Rule 512 will be omitted.

Mr. ATTERBURY. I am assuming now that where they say "all other trains" they mean anything in the nature of an obstruction, whether it is a train with an engine and caboose or whether it is a car, or whatever it might be; I am assuming that it means any obstruction to the free movement of trains.

Mr. DEWALT. Taking that sort of construction you would be right, of course, but I doubt very much if you would agree, in a matter of evidence, that those words "all other trains" would include bumper cars, because they are not trains.

The CHAIRMAN. By bumper cars you mean a number of idle cars standing on a side track waiting to be taken into trains.

Mr. STEPHENS. Still, the object of the provision is no doubt to prevent wrecks, and a box car of any sort or any portion of the railroad equipment would cause a wreck as effectually as a train, would it not?

Mr. DEWALT. Yes, that is true, if it is put on a track where a train is moving, but, from my own personal knowledge and from what Mr. Atterbury says, bumper cars are at the stations, and are merely supply cars for use in case of emergency. They can scarcely be called trains.

Mr. STEPHENS. Still, the provision contemplates the prevention of wrecks, and a car would cause a wreck as effectually as a train.

Mr. BARKLEY. These bumper cars are located at the bumper end of a track, are they not, and that track is practically a blind track?

Mr. ATTERBURY. Yes, sir.

Mr. BARKLEY. The trains that this section refers to are moving trains. Is there any occasion for them to be on that track, unless they are going in there to bring out bumper cars?

Mr. ATTERBURY. Yes; you must take trains in to unload them, because the same track that you use to load a train out is also used for unloading the train.

Mr. BARKLEY. You are speaking of freight trains, are you not?

Mr. ATTERBURY. No, sir; I am speaking of passenger trains. I have only spoken about them. The common practice all over the country is that when a train comes into the station, there standing right in front of it is the next locomotive to take the place of the one pulling the train. Now, you could not get that train in.

Mr. CULLOP. Would either these bumper cars or the engine to be used in taking the train out be reflected to an approaching train by the block signal?

Mr. ATTERBURY. Yes, sir.

Mr. CULLOP. Then, it could not go in there at all?

Mr. ATTERBURY. He could not go in there on a white block nor could he under the instructions be given a green block. I take it that every movement shall be under a white block.

Mr. ESCH. You have your own signal system on your line, have you not?

Mr. ATTERBURY. Yes, sir.

Mr. ESCH. I should think that would safeguard it, so far as that situation is concerned.

Mr. SIMS. You do not think that the Interstate Commerce Commission has purposely or ignorantly provided something here that could not be operated at all, do you?

Mr. HAMILTON. The comment of the gentleman has been sufficient to enable the committee to reach a conclusion about that, I think.

He said, however, a while ago, that he thought some central authority would be better than a multiplicity of legislative authority.

Mr. ATTERBURY. When it comes to section 6, I have no doubt but what the Interstate Commerce Commission will use good judgment in the application of that section, and I have no criticism to make of it. I believe that the introduction of the steel and steel underframe cars is a very wise thing, and it ought to be progressed with just as fast as the finances of the railroads will permit. When it comes to section 7, I have no objection to submitting the matter to the Interstate Commerce Commission, except that I would like it clearly understood that what might be of use on a single-track line is not only valueless but absolutely dangerous on a railroad such as ours, where we have four, five, and six tracks, with trains running side by side in opposition to each other. Under those conditions a high-powered headlight is an absolute source of danger. We do not want high-powered headlights on our railroads. Further, you can not make a headlight go around a corner, and we have many miles on divisions of our railroad where we have not a straight line, because God did not build the country that way.

Mr. DEWALT. In reference to that, Mr. Esch asked the other gentleman a few moments ago what was the opinion of the locomotive engineers as to the use of electric headlights, or acetylene, or some other headlights.

Mr. ATTERBURY. You gentlemen can not get it. You may get the opinion of the head of the organization, who may or may not be for it personally, but if any member of that organization comes before this committee, or any other committee, he is liable to be fired out of the organization if he expresses an opinion contrary to that of the head of the organization. We have had some of our men do that. They were fired out of their organization because they went up to Harrisburg and expressed their opinions against the full-crew bill. You can not get their opinion. I can get it personally, but you can not get it publicly.

Mr. DEWALT. Well, if you have learned it personally——

Mr. ATTERBURY (interposing). I have run an engine myself, and I suppose the best friends I have on the railroad are among the engineers. We do not want the electric headlight on our railroad.

Mr. DEWALT. Do you mean the locomotive engineers do not?

Mr. ATTERBURY. I mean the locomotive engineers.

The CHAIRMAN. Your headlights may not have learned to shine around corners, but in rounding curves on your railroad, I have met the headlight on the locomotive pulling the train on which I was riding coming back.

Mr. WILLS. May I ask for permission from the committee to reply to what Mr. Atterbury has said?

The CHAIRMAN. Your time will come if you will be patient.

Mr. ESCH. Mr. Atterbury, do the railroads question the jurisdiction of the Interstate Commerce Commission under the boiler-inspection act over the question of headlights?

Mr. ATTERBURY. I do; I do not know what the rest of them do, but I do not think that last boiler business——

Mr. ESCH (interposing). I was hanging the jurisdiction on that last act.

Mr. ATTERBURY. I do not think the Interstate Commerce Commission has any jurisdiction under the boiler bill over the headlight question.

Mr. ESCH. Yet, they seem to be taking it, because they had an elaborate hearing——

Mr. ATTERBURY. No, sir; but they have not issued an order. They have not gone any further.

Mr. WILLS. I would like to ask Mr. Atterbury if there has not been a pretty good showing made under the operation of the boiler-inspection law in regard to the saving of life and limb?

Mr. ATTERBURY. I have not the facts before me that would enable me to express an opinion about that, Mr. Wills.

Sections 8, 9, and 10, gentlemen, in my judgment, are going to take away from your experienced railroad officers and put into the hands of the Interstate Commerce Commission a lot of things they do not know a blessed thing about. Now, I will give you an example of what I mean. I had before me a few days ago a question as to whether we should increase the carbon in our rails five one-hundredths of 1 per cent; now, that is one two-thousandths part. The report was made to me by six of our best engineers. The combined term of service of those six men was two hundred and thirty odd years. Every one of those men had been from 30 to 40 years in our service. Now, you may think that is a very small point, one two-thousandths of 1 per cent of the weight of a piece of rail, and yet it was the combined service of six men from 30 to 40 years which put them in a position to say to me that the time had come to raise the carbon in that rail that amount.

Mr. HAMILTON. What does the raising of the carbon in a rail do to the rail?

Mr. ATTERBURY. The raising of the carbon hardens the rail.

Mr. HAMILTON. Does it make it more likely to break?

Mr. ATTERBURY. Yes; and that has to be met by increased weight, and that increased weight means increased cost. For instance, we have 125-pound rails. We have already gone from 100 to 125 pounds. The engineers now come along and say, "we want to go from 0.80 to 0.85 carbon, but we want 5 more pounds in the head of that rail," so we run our rail up from 125 pounds to 130 pounds.

Mr. HAMILTON. Then the increased carbon makes the rail harder and the purpose of making it harder is to save the rail from wearing away from friction, is that right?

Mr. ATTERBURY. Quite right.

Mr. HAMILTON. So you increase the size of the rail through increaseing the hardness?

Mr. ATTERBURY. You have to increase the weight of the rail and you have to increase the carbon of the rail in order to eventually get greater strength and economy in operation.

The CHAIRMAN. That is because you want to run heavier cars and heavier engines over the tracks.

Mr. ATTERBURY. Why, of course.

The CHAIRMAN. The heavier the load the stronger the track must be.

Mr. ATTERBURY. Yes; it has to be.

Mr. WINSLOW. What was the point in recommending an increase of carbon?

Mr. ATTERBURY. To get greater wear. For instance, we have points on our line about which I told you a few moments ago where no headlight was of use, and we have many sections of the road that are largely curves. For instance, on our line between Pittsburgh and

Altoona, 113 miles, there are comparatively few feet of tangents, and there are points on that line where a rail will wear out in from two to three months. Now, you can all recognize that anything that will lengthen the life of the rail will add to the security of the employees and the passengers, because every time you remove an old rail and put in a new rail you break the track and interject an element of danger.

Mr. WINSLOW. And the condition of the track between those points is different from the whole line of trackage?

Mr. ATTERBURY. Of course, because there are other points where the wear is not so excessive; that is perfectly possible.

Mr. WINSLOW. That would not involve the retracking of the whole system?

Mr. ATTERBURY. No; it does not do that.

Mr. ESCH. And that only applies to the outer rail?

Mr. ATTERBURY. Yes.

Mr. ESCH. Has the Bureau of Standards in its investigation of the causes of accidents brought to its attention by the Interstate Commerce Commission, under the act of May, 1910, aided the railroads in getting better rails and wheels and axles?

Mr. ATTERBURY. I think the Bureau of Standards has done a lot of good work, Mr. Esch, because their work is carried along in an intelligent, engineering way, and apparently entirely apart from the influences of political matters or the influences of the labor organizations or anybody else. The Bureau of Standards is working as a scientific body, and as long as you permit it to continue in that condition you are going to get good work from it.

Mr. ESCH. The result of their investigation of the rails that caused accidents some two or three years ago, and the discovery of what they call transverse fissures and the causes of them, has enabled you to make a change in the rolling of steel rails, has it not?

Mr. ATTERBURY. Yes.

Mr. ESCH. And they recommend that the rail be now made through the electric furnace instead of the open hearth or Bessemer. That will, of course, increase the cost of your rail unless you have cheap water power to develop electric current.

Mr. ATTERBURY. The Secretary of Commerce, Mr. Redfield, has been very energetic, and we have had a lot of information from our English friends. We have ourselves bought several hundred tons of foreign ingots cast in a peculiar way, in order to get the best results. Our engineers are working closely with the engineers of the Bureau of Standards and they are doing very excellent work.

Mr. ESCH. I am glad to hear it.

Mr. WILLS. Mr. Chairman, may I have the privilege of asking my friend Mr. Atterbury a question? He has made the statement that the Bureau of Standards was recognized as being free from the influence of labor organizations. I would like to ask if it is known to be a positive fact that the Bureau of Standards is free from the influence of the Pennsylvania Railroad Co.?

Mr. ATTERBURY. I do not know what you mean by "free from the influence," but, Mr. Wills, you know that in our dear old friend Moseley's time he had a sign up on his door, "None but members of the labor organizations need apply."

Mr. WILLS. That is true.

Mr. ATTERBURY. Sure.

Mr. FITZPATRICK. No, Mr. Chairman.

Mr. HAMILTON. I hope we will not have a symposium here. Each gentleman can have more time.

Mr. FITZPATRICK. Mr. Moseley is not here to defend himself and Mr. Moseley never had anything of the kind on his door, but he did have a great many resolutions——

The CHAIRMAN (interposing). I think the world understands that you all exercise all the influence you can on everybody, and I hope the witness will proceed.

Mr. ESCH. Now, Mr. Atterbury, in answer to your objection to section 5, going back again to blocking and the definition of a block system, do you not think that section 11 would give the commission the power to meet all those emergencies? I will read it:

> That in order to carry out the provisions of this act the commission shall have power to classify railroads, and it may issue general orders as to any requirement of this act applicable to all railroads, or to all railroads in a certain classification, or it may make such special orders relating to particular railroads or to any division, section, or part of any railroad.

Now, under that broad power, could they not make rules to meet these emergencies, these terminal conditions you speak of, and accidents within blocks?

Mr. ATTERBURY. Oh, no doubt, Mr. Esch; section 11 is sufficiently comprehensive to permit of that; but you start in by prohibiting a thing in one place, and then later on you go to work and give the Interstate Commerce Commission the authority to moderate that.

The CHAIRMAN. Do you not think it safe to assume that whether the members of the commission are expert in all things or not, that in passing on any of these questions they will avail themselves of the evidence and the information they can obtain from the Bureau of Standards, and the experts among the laborers, and the experts among the operatives, as well as the six engineers, who are 240 years old, that you spoke of, and have all possible information about these matters you speak of?

Mr. ATTERBURY. Yes; but the days are not long enough for any seven men to follow up the details of railroad operation.

The CHAIRMAN. Then you would escape the improvement a long time, if it took them a long time to determine it?

Mr. ATTERBURY. I will tell you this, that you would stop all improvement if you have got to wait for the Interstate Commerce Commission, under such regulations as you propose here.

The CHAIRMAN. This is merely corrective and not initiative. I do not read it like you gentlemen do.

Mr. ATTERBURY. But nobody is going to do anything if they are going to be corrected for doing it.

The CHAIRMAN. It will stimulate you to use judgment in doing it right in the first instance.

Mr. ATTERBURY. No; it will stimulate us to sit still, and that is what the American people are not accustomed to doing.

The CHAIRMAN. If you sat still and did nothing, then they would be justified in getting after you.

Mr. HAMILTON. Did I understand the witness to suggest that the best policy would be to wait until they did get after them?

Mr. Atterbury. That is exactly what we would have to do.

Mr. Dewalt. I think, Mr. Atterbury, the answer to Mr. Esch's question in regard to section 11 would be this: While the commission would have the power to make special orders relating to particular railroads or any section or part of a railroad, they would scarcely be able, under section 11, to meet particular emergencies which arise almost every day at different portions of the road. They might issue general orders——

Mr. Esch. They could issue a general order with reference to wrecks occurring between blocks, and they could issue a general regulation as to bumper cars in terminals.

Mr. Dewalt. How about the things that happen outside of those matters which are extraordinary events and beyond human foresight?

Mr. Esch. No law could ever meet all the contingencies.

The Chairman. They could arrange to have some of their lawyers or examiners on the spot almost as promptly as these ambulance chasers.

Mr. Atterbury. We have too many of them there now. Our offices are burdened with them, our roundhouses are burdened with them, our whole organization is burdened with inspectors to-day. We do not want more inspectors of the Interstate Commerce Commission on our railroad. We want to railroad.

The Chairman. We want that, too. Go ahead.

Mr. Atterbury. If you will exclude sections 8, 9, and 10, then I have no further criticism to make of this bill, Mr. Chairman.

Mr. Sims. That is all there is in the bill.

Mr. Parker of New York. Under this bill, suppose a train should break in two in the middle of a block and for some reason your air should not work and the front part of your train went on, how would you ever go back legally and get the part left in the block?

Mr. Atterbury. You would not. You have stated a perfectly clear case.

Mr. Parker of New York. How would you ever legally go back and get those two or three cars?

Mr. Atterbury. If the first fellow has gone by a block station, he can not go back in it again.

Mr. Parker of New York. It is, of course, possible that your air would not work and your train would break in two.

Mr. Atterbury. Yes.

Mr. Hamilton. It is clear that those cars would be forever lost.

Mr. Atterbury. They would.

Mr. Neale. That concludes our witnesses, Mr. Chairman.

(The committee thereupon adjourned until Tuesday, May 2, 1916, at 10 o'clock a. m.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Tuesday, May 2, 1916.

The committee met at 10 o'clock a. m., Hon. William C. Adamson (chairman) presiding.

STATEMENT OF MR. VAL FITZPATRICK, VICE PRESIDENT AND REPRESENTATIVE OF THE BROTHERHOOD OF RAILROAD TRAINMEN, 101 B STREET SE., WASHINGTON, D. C.

The CHAIRMAN. Proceed, Mr. Fitzpatrick.

Mr. FITZPATRICK. Mr. Chairman and gentlemen of the committee, in the statement I am about to make I am speaking also for Mr. H. E. Wills, assistant grand chief of the Brotherhood of Locomotive Engineers, Mr. McNamara, vice president of the Brotherhood of Locomotive Firemen and Enginemen, and Mr. Clark, vice president of the Order of Railway Conductors.

At the hearing Friday, April 28, when H. R. 10485 was being considered, Mr. Kruttschnitt, the representative of the railroads, suggested that the employees as well as the railroads should be penalized for any remissions in properly fulfilling the requirements of the operating rules of the railroads. At this time the representatives of the employees are not going to approve or disapprove the suggestion. However, we claim some knowledge of the operating rules and the methods of enforcement by superior officers of the railroads and the many difficulties encountered by the employees through the speeding-up process and inadequate forces.

We ask whether the suggestion was made in good faith or merely to cast aspersions upon the loyalty and fidelity to duty of the employees. If the statement was made for the express purpose of having Congress enact such a law, the railroad employees will be pleased to give the proposal due consideration when the bill is under consideration. We apprehend, however, that the railroads shall vigorously oppose any legislation in this direction unless it is so framed that all of the responsibilities are placed directly upon the train-service employees. In order to furnish the committee some information about the employees complying with the rules and the methods of enforcing the rules by operating officials the following is quoted from the Twenty-seventh Annual Report of the Interstate Commerce Commission, December 15, 1915:

> The evidence is that in the main the rules are understood but they are habitually violated by employees who are charged with responsibility for the safe movement of trains. The evidence also is that in many cases operating officers are cognizant of this habitual disregard of rules and no proper steps are taken to correct the evil. Many operating officers seem to proceed upon the theory that their responsibility ends with the promulgation of rules, apparently overlooking the fact that no matter how inherently good a rule may be it is of no force unless it is obeyed.

We are willing to admit that this statement is correct to a certain extent. We believe the Interstate Commerce Commission, in order to have stated the case more specifically and more in keeping with conditions upon the railroads should have said:

The evidence is that in the main the rules are understood, but on account of inadequate forces and the speeding-up process they are

habitually violated by employees who are charged with responsibility for the safe movement of trains with the full knowledge and consent of operating officials.

We believe a careful reading of the report of the Interstate Commerce Commission will substantiate this statement, because the commission has repeatedly called attention to the fact that the methods of inspection and the very casual inspections have been a contributing cause to many accidents.

In this connection we submit a copy of a notice reading as follows:

GRAND RAPIDS & INDIANA RAILWAY CO.,
NORTHERN DIVISION,
Superintendent's Office, February 28, 1916.

GENERAL NOTICE NO. 321.

All concerned:

This company has recently been sued by the Federal authorities for alleged violations of the safety appliance laws, charging that certain cars with grab irons missing were moved in our freight trains.

Your attention is called to general rule "O," on page 7, Boo'- of Rules, which reads as follows:

"Employees must examine and know for themselves that grab irons, brake shafts and attachments, running boards, steps, and all other parts of cars and engines which they are to use, and all mecahnical appliances, tools, supplies, and facilities of every kind of which they must make use in performing their duties, are in proper condition. If not, they must put them so or report them to the proper person and have them put in order before using."

This rule makes it incumbent upon all employees engaged in the making up, inspecting, and movement of a train to know for themselves that all cars in their train out of yards or taken into train at any station or siding en route are equipped as required by law.

J. W. HUNTER, *Superintendent.*

We have letters from the employees of this company advising that the rules can not be complied with on account of insufficient time and an inadequate force; that complaint was filed with Mr. Hunter, superintendent, and he was requested to say just what the notice meant, but he refused to give any explanations or instructions, therefore the employees wanted the Interstate Commerce Commission to investigate and compel all concerned to carry out the rules. Of course, the Interstate Commerce Commission has no jurisdiction in a matter of this kind.

The enforcement of the operating rules is a very easy matter, and it should be incumbent upon the operating officials to see that the employees understand the rules and properly carry them out. In speaking for the employees, we can say that they will welcome a strict enforcement of all operating rules.

Mr. Atterbury, representing the Pennsylvania Railroad, stated that the executive officers of the railroad brotherhoods controlled the legislative activities of the members; that Mr. Mosely, when secretary of the Interstate Commerce Commission, had a sign on his door to the effect that none but labor leaders were allowed; and that we have too much Government inspection now.

To answer these statements full and complete would consume much of your valuable time; therefore, to be brief and to the point, we will say that the railroad brotherhoods expect their members to yield cheerfully to the proper and lawful authority as layed down in the

constitution and by-laws which were enacted by the rank and file of the membership. This is a fundamental law of our Republic and every society and institution. It is a fundamental principle of democratic government that the minority shall be bound by the acts of the majority, and that principle, we are pleased to say, is accepted by the 350,000 members of the railroad brotherhoods. Prior to the adoption of this policy the railroads were able to use certain employees in opposition to every kind of safety legislation.

We are sure that if the officials of the railroad brotherhoods went to Mr. Mosely's office when he was secretary of the Interstate Commerce Commission, it was for a righteous cause. Mr. Atterbury's insinuation might also be directed toward various congressional committees and the President of the United States because in this work of safety legislation we endeavor to state our case in the open. We have nothing to conceal and everything to reveal, because it means the conservation of life and limb. The violators of the law detest the law, police power and the policeman, and as the Pennsylvania Railroad has been frequently penalized for failure to comply with the safety appliance and hours of service laws, Mr. Atterbury's attitude is significant. It might be well to say that in all the prosecutions brought for the enforcement of the hours of service act the officials of the Pennsylvania Railroad are the only ones who have been personally prosecuted.

Mr. Chairman and gentlemen of the committee, it is very apparent that the cost of clearing the railroads of man-killing and maiming obstructions are going up (referring to H. R. 9047).

The CHAIRMAN. Mr. Fitzpatrick, will it trouble you for me to ask you a question before you enter into a discussion of that bill? We asked similar questions of the railroad representatives the other day. They represented that the enactment of this bill will immediately cast upon the carriers heavy burdens in the way of expenditures. What I want to know is this: Would you all be willing for the bill to be so shaped by amendment, if it is not so worded now, that existing structures which will be so very expensive to change shall be modified gradually and wisely, and that all new structures shall be made to conform to this bill?

Mr. FITZPATRICK. That is just what the bill now does, Mr. Chairman, and I will come to that question in the statement to follow, and Mr. Clark will also deal with it in his additional statement.

The CHAIRMAN. That is a matter the committee would like to be informed about. In that way the burdens, if not made lighter, would be distributed through a longer peirod of time and in that way made less burdensome.

Mr. FITZPATRICK. Yes.

Should this legislation be deferred for a longer time we can expect the railroads to say that the removal of dangerous obstructions and the maintenance of sufficient and safe clearances will cost more than it did to build all the railroad mileage of the American Continent.

In all safety legislative endeavors the railroads paint a gloomy picture of despair involving wreckage and bankruptcy. In their analysis of such legislation they go to the very extreme in pointing out drastic and revolutionary features in the legislation, but when

the law is enacted their views immediately change and they then seek for loopholes to keep away from carrying out its honest intent and purport.

In the statement to follow we will endeavor to show conclusively that beneficial results have accrued both to the employees and the railroads since the adoption of safety-appliance laws. This being the case the apprehension of the railroads is illogical and without justification. We believe their opposition to this bill is erroneous and mistaken and we take issue with the amount which they have stated it would cost to comply with its provisions.

Section 4 of the bill plainly provides:

> And the Interstate Commerce Commission may thereafter and from time to time upon full hearing and for good cause extend the period within which any common carrier shall comply with the provisions of section 3 of this act with respect to any obstruction or obstructions the actual erection, construction, or establishment of which shall have been commenced prior to six months from the passage of this act.

The representatives of the railroad employees thought this provision would enable the Interstate Commerce Commission to exempt or extend for a time, or in fact for all time, compliance with this bill so far as tunnels were concerned. With this provision it must be admitted that the cost of clearing the railroads of the minor obstructions sinks into insignificance when compared to the appalling casualties to persons. It was estimated by the railroads that it would cost $444,000,000 to comply with the La Follette bill. In that estimation were all kinds of obstructions. The dimensions of cars and locomotives was fixed as well as the clearance or free space. Now this bill does nothing of the kind, yet we are told that it would cost the railroads $1,556,000,000 more than the La Follette bill. We believe a careful analysis of the statements made the representatives shall show many inconsistencies. Now, gentlemen, should life and limb be sacrificed on account of the cost?

In meeting the principal objection of the railroads by the elimination of tunnels from the provision of this bill we have to consider the many State laws regulating clearance of obstructions, because the United States Supreme Court has rules that State laws become void when the Federal Government enacts laws on the same subject matter, and such an exemption should have very careful consideration.

Recently several prominent railroad officials appeared before this committee and expressed their approval of Government regulation of many important matters very vital to the railroads. In such matters they seem to have faith in the ability, integrity, and fairness of the Interstate Commerce Commission. However, in this matter, which is of vital concern to the employees and the traveling public, they have all kinds of apprehension about the commission's fairness and ability to successfully administer the law should the bill become a law.

We point to the fact that in the administration of all the safety appliance laws the commission has been exceedingly lenient in the enforcement of them and have given many extensions of time. The employees have not found fault with the commission in these matters. In this matter we believe the commission can be trusted to give the railroads a square deal.

In order to apprise the committee as to how obstructions are regulated on the railroads in the United Kingdom, we submit a copy of a letter from the Department of Labor, as follows:

DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., April 28, 1916.

Mr. VAL FITZPATRICK,
Vice President and Representative Brotherhood of Railroad Trainmen,
101 B Street SE., Washington, D. C.

DEAR SIR: Your letter of the 26th instant has been referred to this bureau for attention, and in reply I have to say that so far as a thorough search has been able to discover it appears that the regulation of railroads respecting the matters inquired of by you differs very much in the United Kingdom from that followed in the United States. There is a strong tendency to hold the companies to a strict degree of accountability for injuries occurring on or in connection with their lines, without specifying in any great detail the requirements for safety that are to be observed. The prevention of accidents act of 1900 authorizes the board of trade to take such measures as it may think proper to reduce or suppress the dangers and risks inherent in the operations of railroads, with particular attention to items mentioned in a schedule appended to the act. This schedule mentions the position of offices and cabins near working lines and other items that would furnish protection in the matter of clearance, fouling, etc., and one of the regular headings for accident reporting relates to injuries from "overbridges," etc.

Rules were issued of the date of August 8, 1902, covering a number of the points referred to the board of trade, among them being requirements that switch rods and signal wires must be placed so as to avoid danger, and this seems to be the only item mentioned coming within the scope of your inquiry, no actual distances or measurements being found.

The rules of the companies themselves doubtless contain definite prescriptions in the matter, and it is within the power of the board of trade to direct any modifications of these rules that lies within the scope of their authority, and this seems to be the way in which the end in view is attained. I am,

Very truly, yours,

ETHELBERT STEWART,
Acting Commissioner of Labor Statistics.

We were asked whether the Government had anything to do with the regulation of mail cranes. In reply we submit copy of a letter by the Post Office Department, reading as follows:

POST OFFICE DEPARTMENT,
SECOND ASSISTANT POSTMASTER GENERAL,
Washington, November 30, 1915.

Mr. H. E. WILLS,
A. G. C. E. and National Legislative Representative,
National Legislative and Information Bureau,
101 B Street SE., Washington, D. C.

SIR: Receipt is acknowledged of your letter of the 26th instant, asking whether this department furnishes to the railroad companies any specifications for the construction of mail cranes, and if so, that you be given a copy of the same.

We do not have any specifications covering this matter. For a long number of years there has been in use on railroads throughout the country an accepted type of mail crane construction which has been called standard. It has two arms, between which the mail pouch is hung, and when the pouch is caught by the mail catcher attached to the car, these arms, by gravity, assume vertical positions. Manufacturing concerns are making this style of crane, as, for instance, the Columbian mail crane, Columbus, Ohio; and the Barker mail crane, Clinton, Iowa. The Davidson safety mail crane, manufactured by William Davidson, Birmingham, Ala., which is also available for use by railroad companies, departs from this construction, in that the crane, or rather the upright member, is much higher than the usual type, and the bag is hung between ropes and chains working on pulleys, thus doing away with the arms and thus forming the safety feature of the crane.

The railroad companies are thoroughly familiar with what is required in the way of a mail crane and what is adapted for their line of roads in connection with road

clearances. The catcher arm, which is attached to the door of the mail car or apartment, is the only feature in connection with the catching of mails that is covered by our requirements by specified measurements, as will be seen by R. M. S. drawing No. 12, copy inclosed herewith.

Respectfully,

JOE P. JOHNSTON,
General Superintendent.

I find that Representative David J. Lewis, the able chairman of the Committee on Labor, submitted to the Commission on Employers' Liability and Workmen's Compensation a very complete table of railway accident statistics for the principal railway countries, the statistics being taken from the original sources. These tables are found on pages 43 to 45 of the second volume of the report of that commission. I include in my remarks only the summary, which gives a comparison between the various countries during the years 1905–1909.

Countries.	Injured.	Killed.	Number of employees to 1 injured.	Number of employees to 1 killed.	Number of employees.
Argentina	320	88	258	928	82,670
Austria	1,455	106	160	2,205	233,726
Belgium	611	54	113	1,380	69,129
British India	612	375	786	1,282	481,109
Canada[1]	1,015	217	118	552	119,845
Denmark	19	11	538	1,017	11,187
France	576	278	517	1,068	296,887
Germany	1,498	636	431	1,016	646,426
Hungary	215	108	496	988	106,726
Norway	12	2	340	2,125	4,251
Prussia	916	452	485	984	445,076
Russia	2,209	644	261	1,180	760,452
Sweden	148	36	250	1,031	37,123
Switzerland	1,467	37	26	1,071	40,031
United Kingdom[2]	4,250	430	134	1,351	580,953
United States	77,334	3,568	19	421	1,502,944

[1] Canada, 4-year average. [2] United Kingdom, 14-year average.

A member of the committee asked a representative of the railroads whether the rich railroads paid better wages than the poor railroads, and the answer was in the affirmative. We do not care to take up the time of the committee discussing a question of this kind, but the statement is worthy of passing note at least. It is not a fact that the rich railroads pay more wages than the poor railroads, but it is a fact that they do not pay any better wages and have used their wealth to keep wages down.

The men in the train service fill hazardous positions. They must work with their brains as well as with their hands; go on duty any time during the day and night and in all kinds of weather and perform exacting service involving risk to life and limb. According to the statement of the railroads the average annual salary is $1,200. Taking the road trainmen, the average hourly rate is 28 cents, which would require trainmen to work 4,285 hours or 358 days of 12 hours each in order to earn the stated annual compensation. Trainmen are away from their homes as a rule 24 hours and longer, and when additional expense of maintenance away from home is paid, we find they earn considerable less than $1,000 as an average annual wage rate. As compared with other artisans, the employees in the train service are very much underpaid. They are not even compensated

properly for their labor, to say nothing about the hazardness of their duties.

We submitted in evidence copies of the rules and regulations on various railroads, showing the duties and responsibilities of trainmen and the hazards they are subject to in properly carrying out these rules. Men are required to be on constant lookout when the trains are in motion for any defects. They are required to be on top and on the side of cars, and as a consequence they are always exposed to overhead and side obstructions. The representatives of the railroads contend that brakemen are not required to go on top of cars; that the Federal law virtually prohibits this. We admit the safety-appliance act was enacted for this purpose, yet the railroads require the employees to ride on top of cars, and as evidence of this fact I quote the following:

BULLETIN NO. 13.

MOBERLY, MO., *April 8, 1916.*

All conductors:

Rule 23 reads as follows:

"Freight brakemen must ride on top of the train as much as possible, where they can apply the brakes if necessary, and conductors must see that brakemen perform their duty. They must require all of their brakemen to be on top of the train at least one-half mile before arriving at and while passing all stations and stopping places, descending or ascending grades, or at any point or time where extra precaution is necessary to insure safety. After station whistle has been sounded, conductors or rear brakemen will give all-right signal to the head brakeman, who will transmit same to engineman; failing to receive such signal engineman will stop at once."

A number of trainmen have been disciplined for violation of this rule, and unless the provisions are carried out and an improvement made it is very evident we will no doubt have to make an example of some one, which I feel is not necessary if you will give the matter immediate attention.

Yours, truly,

FRED MEYERS, *Train Master.*

Mr. ESCH. Was that issued by some railroad?

Mr. FITZPATRICK. Yes, sir; the Wabash Railroad. The Wabash Railroad runs through Moberly, Mo.

Mr. ESCH. In States where they have the full-crew bill the middle brakeman would either have to stay on top of the middle car between stations or he would have to go forward from the caboose to get into the middle of the train or go back from the engine; where would he ride if he was not on the cars?

Mr. FITZPATRICK. In States where they have a law providing an additional brakeman, or, in other words, providing for a minimum number of men on a train, the duties of that brakeman are not confined exclusively to riding on any part of the train, but his duties are to do the work and carry out the rules of the railroad company. Now, it is not generally known, but it is a fact and can be proven, that with only two brakemen on a train, when a train is stopped a literal compliance with rule 99 would tie up the traffic on that system, because the rule plainly says that when a train stops or is liable to be overtaken by another the rear trainman must immediately go back to protect the rear of his train, and the next man on the train will take his place. Now, if there are only two men on the train, that means the head man. If the head man takes his place as required by the rule, it means there is not anybody there to do the work if a drawbar breaks or an end sill breaks; that means the train has to stand still until they send for some one or until a relief train comes.

Therefore the third man on the train is there to perform any and all kinds of service that may be required of him to meet any event or any emergency.

Mr. ESCH. I thought the middle brakeman oftentimes was used to transmit signals from the middle of the train when going around a curve.

Mr. FITZPATRICK. That is true on many railroads where they have them. Some of the railroads are operating trains so long, so many cars in a train, that the length is so long that it is impossible for the engineman to receive a signal from the rear of the train.

Mr. HAMILTON. Are these long trains usually composed of empties?

Mr. FITZPATRICK. Oh, no; they are usually pulling their full tonnage.

Mr. PARKER of New York. Those long trains are always through trains, are they not?

Mr. FITZPATRICK. Yes. For instance, on the Virginian Railroad the averge train is composed of about 125 cars of coal.

Mr. HAMILTON. Does one locomotive pull that train?

Mr. FITZPATRICK. Yes, sir. Of course, it is pretty much all down grade from the coal fields to tidewater.

Mr. HAMILTON. Will one locomotive take a train like that up much of a grade?

Mr. FITZPATRICK. No; it will probably require two locomotives on something like a 2 per cent grade or 1½ per cent grade.

It will further promote safety and minimize the casualties occurring if the railroad will just put into effect a rule prohibiting trainmen riding on top of cars; and we feel, after what they have said here, that it is their duty to prevent trainmen riding on top and at the side of cars unless it is extremely necessary to save life and property.

Mr. Chairman, you asked the question whether the companies were paying out more at the present time on account of personal injury claims than heretofore. In 1908 they paid out $20,345,035; in 1914 it amounted to $32,721,813, which shows an increase of $12,376,778 in six years. The best information obtainable as to the amount paid out this year for personal injury cases is approximately $28,000,000. While there has been a reduction, we believe it is due to the fact that there are considerably less men employed at the present time than in previous years.

Mr. STEPHENS. Is that so? Do you mean to say that there are less men employed now on railroads than there were two years ago?

Mr. FITZPATRICK. Yes, sir; that is according to the report of the Interstate Commerce Commission.

Mr. STEPHENS. Has not railroad traffic enormously increased?

Mr. FITZPATRICK. It has increased quite materially.

Mr. CULLOP. Five men are now doing what 25 men were required to do some years ago.

Mr. FITZPATRICK. In 1913 there were employed——

Mr. HAMILTON (interposing). I did not catch Mr. Cullop's statement. Do I understand you to say that 5 men are now doing what 25 men previously did?

Mr. CULLOP. Yes.

Mr. HAMILTON. That is a very important statement.

Mr. FITZPATRICK. I think the judge has stated it accurately.

Mr. HAMILTON. Somewhere in your remarks I wish you would enlarge on that. Does that statement apply only to the running of trains?

Mr. FITZPATRICK. Yes, sir; that is because of the larger locomotives and the increased capacity of the cars.

Mr. HAMILTON. And it does not require any more men for a train than before?

Mr. FITZPATRICK. No, sir; it does not take any more men to operate a train. The ability to move a greater tonnage per train has resulted in a constant reduction of the train-service force.

Mr. CULLOP. And also in the number of crews?

Mr. FITZPATRICK. Yes, sir.

Mr. CULLOP. They haul four or five times the number of cars in a train that they used to haul, and they have the same number of men in the train crews.

Mr. HAMILTON. Mr. Cullop said that five men are now doing the work that was formerly done by 25.

Mr. FITZPATRICK. I think that is right.

Mr. MONTAGUE. You mean that the amount of tonnage moved per man has increased?

Mr. CULLOP. No; I mean this: Formerly it took five men to handle a train of 18 or 20 cars of about one-half the tonnage of the present cars. Now the same five men would handle a train of from 60 to 100 cars with nearly double the tonnage in each car.

Mr. FITZPATRICK. I will state it a little differently so that you can understand it more thoroughly. One man to-day is producing or manufacturing as much transportation as five men produced or manufactured 25 years ago.

Mr. HAMILTON. But even that statement does not seem to me to quite explain Judge Cullop's proposition that five men to-day are doing what 25 men did before. In other words, there are 20 men less required on this specific operation, we will say. That is what his statement amounts to. Now, I do not think he means exactly that, and, inasmuch as you are an expert on it——

Mr. CULLOP (interposing). You had five trains then where you have only one now?

Mr. RAYBURN. One train carries as many cars as five trains used to carry, and you have the same number of men in the train crew. They have one train now to do what five trains formerly did.

Mr. FITZPATRICK. I do not know how I can state it differently or more accurately than I have already done. The fact is simply this, that one trainman to-day is producing or manufacturing more transportation than 25 men produced or manufactured 25 or 30 years ago.

Mr. HAMILTON. The tonnage carried has increased, of course?

Mr. FITZPATRICK. The tonnage has increased and the locomotives have increased in capacity.

Mr. HAMILTON. And you do not have as many trains?

Mr. FITZPATRICK. We have not as many trains now. The train mileage of the country has been decreasing every year. I am sorry that I did not bring some data along on that particular point.

Mr. CULLOP. You can fill that in when you come to revise your remarks.

Mr. SIMS. Here is the crux of it: The unit of cost or the labor cost is being gradually reduced.

Mr. FITZPATRICK. That is another way of stating it; yes, sir; it can be stated that way.

Mr. RAYBURN. You started to read from a report of the Interstate Commerce Commission about the number of men employed in 1913, as compared with the number now employed.

Mr. FITZPATRICK. I beg your pardon, I have that train-mileage data here. This statement shows that the train-revenue mileage for the year 1911, which was an exceedingly good year, was 1,227,947,982.

Mr. HAMILTON. What does that represent?

Mr. FITZPATRICK. The revenue train mileage. That represents every train running on the railroads of the United States producing revenue or earning money.

Mr. HAMILTON. You have added up the mileage paid by all the trains in the United States that were doing business for revenue?

Mr. FITZPATRICK. Yes, sir; and in 1911 that mileage was 1,227,-947,982.

Mr. SIMS. In what year was that?

Mr. FITZPATRICK. In 1911. In 1914 the mileage was 1,242,080,241.

Mr. SIMS. Three years later?

Mr. FITZPATRICK. Yes, sir. The number of passengers handled in 1911 was 897,710,997, the number of freight tons handled was 1,753,189,939.

Mr. SIMS. How many more, in round numbers?

Mr. RAYBURN. Nearly 200,000,000 more.

Mr. FITZPATRICK. I have it worked out. The Number of freight tons handled in 1914 was 1,976,133,155. The increase was 222,-943,216 tons, the increase in passengers carried was 155,427,721, While there was a slight increase in the train revenue mileage, it was handled at approximately the same cost, or with the same number of men. The number of trainmen in the service in 1911 was 308,055, while in 1914 the number of trainmen was 311,990, or an increase of less than 3,000 men. There was practically no increase in the number of men.

Mr. PARKER, of New Jersey. With an increase of about 1 per cent in the number of men, there was a tonnage increase of about 15 per cent, and an increase of about 10 per cent in the number of passengers?

Mr. FITZPATRICK. Yes, sir.

The railroads have opposed safety-appliance legislation and laws to promote the safety of operation on the grounds that they would impose financial burdens, and the same position is taken on the clearance bill. The carriers would have us lose sight of the fact that all of the safety laws we have secured have been of advantage to them and have contributed to their success and economical operation.

Statistics furnished by the Interstate Commerce Commission show that coupling casualties to trainmen in 1893 were over 500 per 10,000 employed, and in 1908 such casualties were slightly above 100, or, stating it differently, in 1893 of the total casualties, 44.33 per cent were attributed to couplings, while in 1908 the percentage was 8.87. At the present time it is less than 6 per cent.

In 1893 the tons of freight carried 1 mile per trainman employed was 500,000, while in 1908 it approximated 800,000.

This remarkable showing in conserving life and limb and the promotion of greater production can justly be attributed to the safety-appliance act of 1893.

Now, gentlemen, we have just been discussing the length of trains, and in this connection I want to say that it is the automatic coupler that makes it possible to move this greater tonnage. If they could not use the automatic coupler and had to use the old style link-and-pin coupler, it would be absolutely impossible to keep trains of that length together. They could not hold trains of upwards of 150 cars together with that kind of coupling.

Mr. MONTAGUE. The railroads opposed the automatic coupler law very strongly, did they not?

Mr. FITZPATRICK. I think the evidence adduced before the congressional committees at that time will show that they claimed that if that law was forced upon the railroads it would completely bankrupt them.

Mr. ESCH. And it was the same way in the case of the air-brake law?

Mr. FITZPATRICK. Yes, sir. At the present time the order of the commission requires the railroads to have their trains only 85 per cent equipped with air brakes, and they are still opposed to making it 100 per cent.

Mr. ESCH. There was a better showing made on the boiler-inspection bill?

Mr. FITZPATRICK. I think so. Let me make this statement—they made a splendid showing on the boiler-inspection law. I think Mr. Wills would like to make a statement in that connection, as to the accomplishment of that law.

Another very remarkable showing is made under the act regulating the transportation of explosives. Prior to the passage of the said act casualties to persons and property resulting from explosives were increasing at an alarming rate, but since its passage and enforcement all casualties to persons and property have about disappeared. The railroads that condemned and vigorously opposed bills advocated by the employees are now telling the public that such opposition was a mistake—that they now find the laws to be very beneficial. The admission, together with the results, would indicate that the employees, while looking first to their own safety, at the same time produced results which were beneficial to the railroads. This clearance-of-obstructions bill while preventing casualties on the railroads will also prove an economic measure for the railroads, because it will save amounts now being paid out on account of personal damage claims. I think they are quite worthy of consideration. I am not able to say at this time how much they amount to, but it is quite an item.

Mr. STEPHENS. You said awhile ago it was $32,000,000.

Mr. FITZPATRICK. That is for all of the casualties, including employees and passengers.

The CHAIRMAN. You think that the apprehension expressed by the railroads of the tremendous expense that would be entailed by this bill is somewhat exaggerated, do you?

Mr. FITZPATRICK. I certainly do.

There is another side to the economical question. The railroads of the country leave to the employees the burden of the human wreckage which results from their operation. For the 10-year period, January 1, 1905, to December 31, 1914, the Brootherhod of Locomotive Engineers paid out for claims incurred by accidental deaths as a result of injuries while in the service as engineer, the sum of $4,860,000.

This was in addition to payments on account of natural death. For blindness, incident to service, there was paid $845,250; for amputation of one or both legs from accident while on duty, $604,500; for amputation of one or both arms from accidental injury while on duty, $264,750. The total for accidents alone, paid by the one organization, during the 10-year period was $6,574,500.

Mr. CULLOP. That does not include court costs and attorney fees?

Mr. FITZPATRICK. No, sir.

The Brotherhood of Locomotive Firemen and Enginemen paid out in claims for deaths during 1913, 1914, and 1915, $2,213,412.55, and for disability during this period a total of $2,867,387.55.

The Order of Railway Conductors, since 1868, has paid out on account of death and disability of its members, $18,838,067, and $1,880,000 of this was paid during the year 1915. During the month of April, 1916, $14,515.83 was paid to members of the order from the relief fund of the organization, and since 1901 there has been paid $1,170,109.42 from this fund, which is in addition to the insurance carried by the members.

Mr. DEWALT. Do the railroad companies contribute to this relief fund?

Mr. FITZPATRICK. No, sir; not a cent. This is paid exclusively by the employees and nobody else.

Mr. DEWALT. The railroad companies have their own relief funds?

Mr. FITZPATRICK. I know, but this is entirely separate and is managed exclusively by the employees. This is a voluntary concern, yet we have to do business under the insurance laws of the States in which we operate, while the so-called voluntary relief associations of the railroad companies are not amenable to any law.

The CHAIRMAN. Is it absolutely voluntary as to the amount paid?

Mr. FITZPATRICK. It is voluntary——

The CHAIRMAN. Are you required to make contributions to the fund?

Mr. FITZPATRICK. The company's relief association is voluntary in name only. A man upon securing employment must become a member of the voluntary relief association. If he is employed——

Mr. PARKER of New York (interposing). Does the contribution bear any proportion to the salary received?

Mr. FITZPATRICK. Yes, sir; that is it exactly.

Mr. CULLOP. Do the railway companies, when they pay the employees, take out this percentage, or is that left to the employees?

Mr. FITZPATRICK. No, sir; they deduct a fixed amount from the salary. So far as I know all the railroad companies deduct that from the men's salaries. The men never see that part of their wages.

Mr. HAMILTON. How do the railroad companies assess that charge?

Mr. FITZPATRICK. They have a regular fixed rate on each class of insurance.

Mr. HAMILTON. For each class of employees?

Mr. FITZPATRICK. Yes, sir.

On account of casualties to trainmen on the railroads, the Brotherhood of Railroad Trainmen paid during the period January 1, 1915, to April 30, 1916, $1,595,441. The organization has paid for death and disabilities since its formation $28,833,132. It is a fair estimate that 47 per cent of this amount was paid on account of casualties on the railroads which resulted in death or permanent disability.

During the year 1915, the four organizations and the ladies' auxiliaries and members thereof contributed $37,809.90 to the maintenance of the Home for Aged and Disabled Railroad Employees, which the organizations have built at Highland Park, Ill.

Millions, in addition to these, have been spent by the organizations, in the payment of relief claims and indigent benefits, and in assisting worthy members when out of employment or in distress. And many more millions have been paid by the railroad companies in damages for the wrongful death of the employees and for injuries received by them in the course of their employment.

Applying this idea to the bill now before the committee, to require safe and sufficient clearance space for employees working in and about trains and between the tracks of the railways, the following figures in addition to those already given may be of interest. They represent insurance certificates in the organization, the Brotherhood of Railroad Trainmen, that have been paid between October, 1914, and January, 1916, on account of casualties due to unsafe clearance conditions:

Albert H. Neubert, death, Oct. 21, 1914, struck by bridge	$1,500
Oris L. Reynolds, death, Dec. 19, 1914, knocked from car by bridge	1,500
R. S. Myers, death, Dec. 1, 1914, rolled between car and platform	1,500
Albert F. Crosby, death, July 26, 1914, crushed	1,500
John R. Helwig, death, Dec. 26, 1914, crushed between cars and platform	1,500
John McLear, death, Feb. 12, 1915, struck by bridge	1,100
Owen C. Vernon, death, Oct. 20, 1914, crushed between shed and car	1,500
Ben F. Dickenson, death, Mar. 11, 1915, struck by bridge	1,500
Joseph Tredinick, death, Feb. 26, 1915, crushed between car and platform	1,100
Joseph Hopfinger, jr., death, Mar. 18, 1915, struck by bridge	1,500
Chas. L. Jazger, death, Mar. 8, 1915, crushed between car and platform	1,500
Isaac B. McMillen, death, Apr. 16, 1915, crushed between engine and platform	1,500
Jas. G. Williams, death, Apr. 16, 1915, crushed between cars and platform	1,500
Wm. Wyckoff, death, Sept. 12, 1915, crushed between car and platform	1,500
Lee Graham, death, Aug. 19, 1915, struck by bridge	1,500
Wm. E. Rager, death, Oct. 14, 1915, crushed between car and cribbing	1,500
Chas. E. Haverly, death, Sept. 30, 1915, struck by water standpipe	1,500
Robert U. Speer, death, Nov. 7, 1915, struck by bridge	550
Frank W. Jones, death, Nov. 6, 1915, crushed between car and platform	550
Edw. M. Flood, death, Nov. 13, 1915, crushed between car and platform	1,500
Perry A. Boone, death, Jan. 7, 1916, struck by overhead obstruction	1,500
Clarence F. Steadman, death, May 29, 1915, struck by overhead bridge	1,500
Total	30,300

Mr. PARKER of New York. How many people were hurt?

Mr. FITZPATRICK. I should say approximately 25.

Mr. PARKER of New York. Killed and injured?

Mr. FITZPATRICK. Yes, sir; nearly all of these accidents resulted in death.

So, gentlemen, the economic argument is not all on one side in connection with safety legislation. This clearance bill is not only a matter of life and limb to the members of these organizations, but it is also a matter of dollars and cents. The employees, however, want to see the man placed before the dollar, and they feel that the companies should not count the cost when it comes to providing safe conditions surrounding the men who operate the railroads.

I have taken occasion to examine the records of the Interstate Commerce Commission for the period July, August, and September, 1915. Table No. 5, as it will appear in the Accident Bulletin, giving an analysis of accidents to persons reported in Table No. 1B, as due

to coming in contact, while riding on cars, with overhead bridges, tunnels, or any signal apparatus, or any fixed structure above or at the side of the track, for steam railways, shows:

Cause.	Killed.	Injured.
Switch stands	1	78
Water cranes	2	30
Mail cranes	1	8
Building at side of or closing tracks	2	44
Bridge, side	6	31
Bridge, overhead	19	39
Tunnels	1	5
Overhead wires		14
Poles, including signal, telephone, telegraph, electric-light warning poles	2	41
Miscellaneous	4	50
Total	38	340

Some of the casualties reported to the Interstate Commerce Commission during the month of January, 1916, were:

William Racine, Kingston, N. H., Boston & Maine Railroad, came in contact with snow board, disability.

Michael Yagatt, Troy, N. Y., Boston & Maine Railroad, caught between coal chute and tender, disability.

N. Rock, Mechanicsville, N. Y., Boston & Maine Railroad, struck by overhead bridge, disability.

G. A. Bradford, Martinsburg, W. Va., Baltimore & Ohio Railroad, struck by overhead bridge, disability.

A. Griffith, Baltimore, Md., Baltimore & Ohio Railroad, struck by overhead bridge, bridge warning not in good condition, disability.

W. S. Welsh, Pittsburgh, Pa., Baltimore & Ohio Railroad, struck by overhead bridge, disability.

W. F. Spangler, Crestline, Ohio, Pennsylvania Co., insufficient clearance, disability.

J. B. Bloomfield, Chicago, Ill., Pittsburgh, Cincinnati, Chicago & St. Louis Railway, squeezed between engine and bridge grinder, disability.

W. A. Reiger, Hammond, Ind., Pennsylvania Co., struck by building, disability.

Edward J. Sherry, Youngstown, Ohio, Pennsylvania Co., caught between car and structure at side of track, disability.

H. W. Hanson, Akron, Ohio, Pennsylvania Co., struck by building, disability.

James Smith, Zanesville, Ohio, Pittsburgh, Cincinnati, Chicago & St. Louis Railway, came in contact with highway overhead bridge, disability.

W. J. Kramer, Cleveland, Ohio, Pennsylvania Co., while climbing up side of moving car he was hit by eave trough of freight house, disability.

J. F. Measuer, Chicago, Ill., Pittsburgh, Cincinnati, Chicago & St. Louis Railway, coat caught and man struck switch stand, disability.

G. R. Alderman, Bradford, Ohio, Pittsburgh, Cincinnati, Chicago & St. Louis Railway, struck by car on adjacent track, disability.

These instances are by no means exhaustive. The records of the Interstate Commerce Commission are full of evidence showing the necessity of a clearance law.

Gentlemen, for myself and on behalf of my associates, I want to thank you for the kind consideration you have given us in this matter.

The CHAIRMAN. You gentlemen can go on again Thursday morning at 10 o'clock.

(Thereupon, at 11 a. m., the committee adjourned until Thursday, May 4, 1916, at 10 o'clock a. m.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Thursday, May 4, 1916.

The committee met at 10 o'clock a. m., Hon. William C. Adamson (chairman) presiding.

STATEMENT OF MR. H. E. WILLS, ASSISTANT GRAND CHIEF ENGINEER AND NATIONAL LEGISLATIVE REPRESENTATIVE, BROTHERHOOD OF LOCOMOTIVE ENGINEERS, 101 B STREET SE., WASHINGTON, D. C.

The CHAIRMAN. Mr. Wills, are you ready to go on with your hearing?

Mr. WILLS. Yes, sir.

Mr. ESCH. Have you a written statement?

Mr. WILLS. Yes.

Mr. ESCH. Would you prefer to read it without being interrogated?

Mr. WILLS. Yes; if that is agreeable.

Mr. ESCH. I think then we had better do that, Mr. Chairman.

The CHAIRMAN. Tell the committee which bill you are going to talk about.

Mr. WILLS. I would like to discuss H. R. 11243, the bill introduced by Representative Sterling to arrange compensation of inspectors.

In making this statement I also am speaking for Mr. W. M. Clark, vice president and national legislative representative, Order of Railway Conductors, Mr. Val. Fitzpatrick, vice president and national legislative representative, Brotherhood of Railroad Trainmen, and Mr. P. J. McNamara, vice president and national legislative representative, Brotherhood of Locomotive Firemen and Enginemen.

Mr. Chairman and gentlemen of the committee, the positions and present and proposed salaries are as follows:

Chief of the division of safety:	
Receives	$4,000
Proposed	5,000
Chief inspector of locomotive boilers:	
Receives	4,000
Proposed	5,000
Assistant chief division of safety:	
Receives	3,000
Proposed	4,000
Two assistant chief inspectors of locomotive boilers:	
Receives	3,000
Proposed	4,000
50 field inspectors of safety appliances, and hours of service:	
Receives	1,800
Proposed	2,400
50 district inspectors of locomotive boilers:	
Receives	1,800
Proposed	2,400

The increases would aggregate about $65,000 a year.

Bills (S. 3523 and H. R. 11243) have been introduced by Senator Cummins, of Iowa, and Representative Sterling, of Illinois, to change the boiler-inspection law so as to authorize the increases in that division. The Interstate Commerce Commission, we understand, has ample authority to give the force in the division of safety an equal increase when the appropriations are made available.

The CHAIRMAN. Mr. Wills, if you will permit the interruption, the clerk informs me we have not yet received any report from the Interstate Commerce Commission about this bill. Do you know whether the Senate has received one or not?

Mr. WILLS. I do not.

The CHAIRMAN. I would suggest that until we receive a report of the views of the commission, we perhaps had better discuss the other bill and then later get the report and see if they agree with yon about it?

Mr. STERLING. Is your statement very lengthy, Mr. Wills?

Mr. WILLS. No; not very.

The CHAIRMAN. Well, then, go ahead. I thought you might prefer to put your time on something we are ready to act upon.

Mr. WILLS. I would be perfectly willing, and in fact glad to submit this statement at this time, because we have had a conversation with members of the commission and I have reason to believe that when you get the report from them it will be favorable.

It may be said that the amendment proposed makes no change in the total amount authorized under the boiler-inspection law. Heretofore, the appropriations allowed that division have not come up to the amount authorized by the act, and although the original boiler-inspection law has been extended and given a much wider scope and the duties and responsibilities of the inspectors and the work of the division materially increased, it is not expected that the additional compensation to the inspectors, which is now proposed, will bring the expenses of the division up to the maximum.

The members of the organizations which we represent are directly interested in the enforcement of these laws. We have found by many years of experience in connection with these matters that we can not rest the case when we have come before Congress and secured the passage of laws to promote the safety of the employees and travelers upon the railroads, but there is a further step. We find it necessary to follow up the law and endeavor to secure its enforcement, and in each of these steps we are as a rule confronted with the same stubborn opposition on the part of the railroad corporations. The request we are now making for a small increase in the compensation of the inspectors is just another part of the greater effort to have the laws that Congress has passed properly and efficiently enforced. We believe the increases are just and fair, and that there are substantial reasons why they should be granted at this time.

The safety-appliance and hours-of-service laws are administered by the Division of Safety of the Interstate Commerce Commission. They require the use of automatic couplers, train-brake system of air brakes, self-dumping ash pans, standard drawbars, and secure grab irons and handholds. The hours-of-service law fixes a maximum service period of 16 hours for employees in train service and 9 hours for telegraphers.

In the year 1893, 44 per cent of all accidents suffered by trainmen were due to coupling and uncoupling cars. In 1915 less than 6 per cent of all accidents to trainmen were due to this cause.

In 1915 the records show for the first time less than 100 men killed and less than 3,000 men injured in coupling operations.

In 1915 there was a decrease of 81 in the number killed and 700 in the number injured in coupling and uncoupling cars, as compared with 1914.

The improvement in the condition of equipment is illustrated by the fact that in 1905, 250,000 cars were inspected, 22 per cent of which were reported as defective. In 1910, 435,000 cars were inspected, over 5 per cent of which were reported as defective; and in 1915 over a million cars were inspected, slightly more than 4 per cent of which were reported as defective.

The beneficient result of these laws is further evidenced by the fact that during the year 1915 there was a reduction of near 50 per cent in the number of instances of violations of the acts reported for prosetion, as compared with the years 1913 and 1914. The carriers reported in 1913, 301,743 instances of employees being on duty in excess of the number of hours fixed by statute. In 1914 this was reduced to 165,305, and in 1915 to 78,940.

A particularly gratifying decrease in the number of collisions is noticed. The records show that in 1907 there were 8,026 collisions, while in 1915 this number had been reduced to 3,538.

There is submitted herewith a more detailed tabulation of the statistics:

Employees killed and injured from the causes indicated for the years named, as reported in the accident bulletins of the Interstate Commerce Commission.

Year ending June 30—	Coupling or uncoupling cars, engines, etc., of employees on duty.		Overhead and side obstructions and falling or getting on or off cars, engines, etc., of employees on duty.	
	Killed.	Injured.	Killed.	Injured.
1902	143	2,113	641	7,937
1903	253	2,788	771	9,017
1904	278	3,441	816	10,581
1905	243	3,110	725	10,422
1906	311	3,503	845	12,750
1907	302	3,948	924	14,156
1908	239	3,121	778	13,088
1909	161	2,353	557	11,488
1910	206	2,985	682	14,573
1911	209	2,966	666	14,869
1912	192	3,236	704	15,721
1913	195	3,361	721	18,257
1914	171	2,694	643	16,428
1915	90	1,994	458	12,128

The locomotive-boiler-inspection law and the act of March 4, 1915, extending same to include the entire locomotive and tender, are administered by the Division of Locomotive Boiler Inspection of the commission. These laws are designed to improve the condition of the motive power of the railroads.

The locomotive-boiler-inspection law has been in operation during a four-year period. Remarkable results have been accomplished during that brief time.

In 1912 there were 856 accidents due to failure of locomotive boilers and their appurtenances, which resulted in 91 killed and 1,005 injured.

In the fiscal year ended June 30, 1915, there were 424 accidents resulting in 13 killed and 467 injured. This is a decrease in the number of accidents of 50.5 per cent, in the number of killed 85.7 per cent, and in the number injured 53.5 per cent. The decreases have been steady and represent real improvements in conditions.

The law authorizes the district inspector to order a defective locomotive out of service until repairs are made. During the four-year period 13,445 locomotives which were being operated in a defective condition and in violations of the law and rules were ordered out of service. The results accomplished fully justified the action taken.

The following tables give the statistics in more detail:

Locomotives inspected, number found defective, and number ordered out of service.

	1915	1914	1913	1912
Number of locomotives inspected	73,443	92,716	90,346	74,234
Number found defective	32,666	49,137	54,522	48,768
Percentage found defective	44.4	52.9	60.3	65.7
Number ordered out of service	2,027	3,365	4,676	3,377

Number of accidents, number killed, and number injured, with percentage of decrease.

	1915	1914	1913	1912
Number of accidents	424	555	820	856
Decrease from previous year ... per cent	23.6	32.3	4.2	
Decrease from 1912 ... do	50.5			
Number killed	13	23	36	91
Decrease from previous year ... per cent	43.5	36.1	60.4	
Decrease from 1912 ... do	85.7			
Number injured	467	614	911	1,005
Decrease from previous year ... per cent	24	32.6	9.3	
Decrease from 1912 ... do	53.5			

The following table shows the total number of persons killed and injured by failure of locomotive boilers or their appurtenances during the past four years, classified in accordance with their occupations:

	Year ended June 30—							
	1915		1914		1913		1912	
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Members of train crews:								
Engineers	5	150	8	187	12	268	22	310
Firemen	7	207	8	290	12	478	19	491
Brakemen		40		46	6	79	8	79
Conductors	1	4	1	6	2	7	4	16
Switchmen		4		1		2		7
Roundhouse and shop employees:								
Boiler makers		5	1	18		10	2	
Machinists		10	2	5		11	7	17
Foremen		2	1	6		4	1	1
Inspectors		3		3		3	1	2
Watchmen		1	1	7		8	3	6
Boiler washers		9		8		4	1	4
Hostlers		6		9	1	6		5
Other roundhouse and shop employees		2	1	17	1	24	14	62
Other employees		2		10		4	3	3
Nonemployees		1		1	2	3	6	2
Total	13	467	23	614	36	911	91	1,005

The improved conditions shown by these figures, with the increased safety to both the traveling public and the employees on the railroads which they indicate, can be attributed to the manner in which the laws have been administered. The figures represent the saving of human life and limb. They show that under these laws the railways have made changes in operating methods and in equipment that have bettered the conditions and lessened the hazards under which the men are compelled to work.

These results have been achieved, so far as we know, without any serious friction with the officials of the various railroads and without imposing any undue hardships upon the companies, and are, in a very large measure, due to the high grade of men who have been appointed to the positions and to their tact and intelligence and their integrity and interest in the welfare of the persons whom Congress intended to protect in enacting the laws.

This record was accomplished in spite of the fact that the inspectors have been paid an inadequate compensation, and we refer to the good work that has been done as a reason why the Government should now give these men salaries commensurate with the services they perform.

There has been no increase in the salaries of any of the district and field inspectors since the establishment of the boiler-inspection division, in 1910, although in both divisions more work has been imposed upon them. The safety-appliance and hours-of-service inspectors have been assigned to the investigation of wrecks, and the duties of the locomotive-boiler inspectors have been greatly increased by reason of the enactment of the law requiring an inspection of all parts of the locomotive and tender in addition to the boiler and appurtenances. A comprehensive code of rules was put into effect on January 1, 1916, and their enforcement has added materially to the work of the boiler-inspection division.

In general, the duties of the locomotive-boiler inspectors are to inspect the complete locomotive, and for this reason only high-class men can be used. As has been frequently stated before the committees, it is the practice of railroads to use different men to inspect the various parts of the locomotive, requiring a boiler maker to inspect the boiler, a machinist or engineman to inspect machinery, and an air brakeman to inspect air brakes. The Government inspectors are all trained and are required to inspect the entire locomotive, and have stood a very rigid civil-service test, showing that they possess all the necessary qualifications to do so.

This requires, first, a very complete mechanical training, as well as more than average ability, and much practical experience. Men who are performing work of the same character, but not so extensive, for the railroads are receiving from 20 to 50 per cent more than the inspectors of the Government. These men, because of their abilities and experience, are in demand by the railways for important positions, such as general inspector, general master mechanic, etc., and a number of them have recently been offered a considerable increase in wages to return to railroad service. Two have accepted such offers and it is feared that others will also accept.

If this is allowed to become general, and any number of men leave the service, the ranks will be depleted and the efficiency seriously impaired; because, although there would be no difficulty in obtaining

other men to take their places, the new men would not have the training that the present inspectors have had. It is not possible for any inspector to handle all of the work satisfactorily without special training, and a new man could not be expected to reach the efficiency of the present force with less than three or four years' service in the division.

The work of the Government inspectors is important. It requires men of intelligence, mechanical ability, and tact of a high order. The authority vested in the inspectors by the law to order locomotives out of service for repairs entails a great responsibility. The inspectors are pitted against the best men that the railroads can employ, and who as a general rule receive higher salaries, and if the inspectors, when they have become especially valuable to the Government on account of their training in the public service, are taken over by the railways, and the companies naturally try to pick the best men in the force, it will result in the division being forced to pit men who are comparatively new in the service against others who have had years of experience in this line of work, and will greatly reduce the efficiency of the division, and hamper the work.

A similar situation exists in both divisions. The duties of the safety-appliance inspectors require that they examine carefully all cars and locomotives in service on the various railroads to see if this equipment is provided with the full complement of safety appliances prescribed by the laws and the orders of the commission, and that once provided they are properly maintained.

All defects discovered are brought to the attention of the representatives of the carriers, the requirements of the law carefully explained, and proper methods of application and maintenance discussed.

Intelligible and comprehensive reports of the results of these inspections must then be made so that proper and discriminating records may be maintained by the Interstate Commerce Commission and analyses sent to the chief executive officers of the carriers.

Where conditions indicate disregard of the law or a lack of vigilance in inspecting and repairing equipment, inspectors secure evidence for prosecution. In this work a nice discrimination must be exercised and in this, and later in the trial in the courts of the case in which they are witnesses, a most thorough knowledge of the safety-appliance laws in all their ramifications is necessary.

They are required to and must at all times be ready to make investigations of the railway accidents occurring, a work drawing still further on their general knowledge of railroad operation. These disasters occur at unexpected times and places, and inspectors are frequently called upon to hurry to the scene of a wreck in the nighttime. They must be able to deduce from all the evidence in connection with the accident the cause thereof and suggest remedial and preventive action. In order to do this, they must have an intimate knowledge of general railway operation of railway signal engineering, the complicated air-brake systems, the multitudinous traffic problems, or any other branch of railway operation that may be involved in an accident.

Their duties are exacting, bringing them in contact with the foremost authorities in the country in their various fields of endeavor. They must be able to uphold the dignity and authority of the

Government, dealing with men who generally receive salaries of from $5,000 to $15,000 per year, whereas the present salaries of the field inspectors is just about equivalent to that of an ordinary gang foreman or roundhouse foreman of the average railroad.

In some cases, owing to the progress made by those who have remained in the service of the railroad companies, the former associates of the men who are now serving the Government as inspectors are to-day receiving higher wages than the inspectors. Had these same men, who possess exceptional qualifications, remained in the employment of the companies they would now be getting more pay. These men are not receiving a compensation commensurate with the great responsibilities they bear and the exacting and important duties they perform, and in view of this and in view of the good that has been accomplished by the enforcement of these laws and the fact that those men have not had an increase in a number of years while men in other lines have been advanced, the organizations believe they should now be given a more nearly adequate salary, and we are asking Congress to do this, feeling confident that the public sentiment will approve of that action on the part of the Representatives of the people.

Mr. ESCH. Have you finished your paper?

Mr. WILLS. Yes.

Mr. ESCH. There are some questions I would like to ask you in that connection, Mr. Wills. When we passed the act during the last Congress giving the boiler inspectors power to investigate all the appurtenances of the locomotive, we required that they take a civil service examination as to the added duties and responsibilities.

Mr. WILLS. Yes, sir.

Mr. ESCH. Have these examinations been held?

Mr. WILLS. Yes, sir.

Mr. ESCH. How did the 50 inspectors stand that examination?

Mr. WILLS. I was informed that they all passed the examination, they were all up to the standard, and so all 50 were retained as inspectors.

Mr. ESCH. Then we have the same personnel now that we had when the act was passed?

Mr. WILLS. With the exception of two or three who have left the service, one to accept twice the wages the Government was paying him before he left.

Mr. ESCH. I would like to ask another question. In case there is a wreck, does the district boiler inspector go to the scene of the accident and cooperate with Mr. Belknap and his experts to determine the cause of the wreck or do they only go when the locomotive or a defect in the locomotive is involved?

Mr. WILLS. Only when the locomotive is involved unless something else is involved and the safety appliance division ask for the assistance of a locomotive inspector. They have been called on a number of times, I understand, on account of some complicated matter, when the wreck was not caused originally by a boiler explosion or by a defective appurtenance, and when called upon they do assist and have assisted in several cases, so I am informed.

Mr. ESCH. What would this bill, if enacted, add to the expenses of the boiler-inspection service?

Mr. WILLS. About $32,000 or $33,000 a year.

Mr. ESCH. Each district inspector would get how much more?

Mr. WILLS. $600.

Mr. ESCH. He is now getting what?

Mr. WILLS. $1,800, and this would give him $2,400.

Mr. RAYBURN. And there are 48 of them?

Mr. WILLS. Fifty.

Mr. RAYBURN. I thought there were 48 and a chief inspector and an assistant chief inspector.

Mr. WILLS. There are 50 district inspectors, the chief, and two assistants, 53 all told.

Mr. ESCH. Do the three commissioners of the boiler inspection board get any more?

Mr. WILLS. The chief and the two assistants, you refer to?

Mr. ESCH. Yes.

Mr. WILLS. This is intended to raise them $1,000 each.

Mr. STERLING. They get $4,000 now?

Mr. WILLS. Yes.

Mr. STERLING. What class of men get the $3,000 salary?

Mr. WILLS. The assistant to the chief inspector. I would like, if I might, to offer just a word of explanation. When the bill was originally drawn for a boiler inspection service, it was drawn so that the salary of the chief inspector would be $6,000. It was agreed at that time that they should have that class of man and a man who would command that salary; but it was found that Gen. Uhler, the chief of the Steamboat Inspection Service, was getting a salary of $3,000, and they did not want to give the chief inspector of locomotive boilers any more than they gave him. They did not want to raise him $2,000 or $3,000 in salary, so that influences were brought to bear which brought the salary of the chief inspector of locomotive boilers down to $4,000 and raised the salary of the chief of the Steamboat Inspection Service $1,000 a year, which gave him $4,000. But in this particular case, the showing which has been made since that time we believe now warrants Congress in recognizing the efficiency and ability that has been put into this service by both the chief inspector of locomotive boilers and the chief inspector of safety appliances, as well as the district inspectors.

Mr. O'SHAUNESSY. From whom are these men recruited?

Mr. WILLS. From men who have had actual experience.

Mr. O'SHAUNESSY. Actual experience as what?

Mr. WILLS. As locomotive engineers or firemen or machinists or boiler makers.

Mr. O'SHAUNESSY. What salary did they get when they went in the service as distinguished from what they were getting when working for the railroad?

Mr. WILLS. Practically the same as they receive now.

Mr. O'SHAUNESSY. No; I mean did they get any more when they went into the Government service than they were getting from the railroad companies?

Mr. WILLS. They get now practically the same as they were getting from the railroad company. There might be a slight increase in some cases.

Mr. O'SHAUNESSY. It has not been changed. Did they get more when they went into the Government service than they got when they were working for the railroad company?

Mr. WILLS. I think in some few instances, perhaps, it did give them more.

Mr. O'SHAUNESSY. There was something to attract them to the Government service?

Mr. WILLS. Yes; there was much to attract them. There was the fact of being in the Government service as a Government official, and that is very attractive, I believe, and is well recognized by men generally.

Mr. O'SHAUNESSY. What I am getting at is this: I was interested in your statement that had they remained in the service of the railroad companies they would be getting more pay than they now receive from the Government.

Mr. WILLS. The men who were their equals and their associates from four to six years ago are now receiving much more pay.

Mr. O'SHAUNESSY. How much more pay?

Mr. WILLS. I could only give that as a rough estimate by saying that the average man who would be qualified for this position has been selected for a higher position and promoted in the railroad service and receives in many instances more than twice the pay these men receive.

Mr. O'SHAUNESSY. That simply bears out the statement that I have frequently made that men are better off outside of the Government service, and that is the reason I believe in retiring the civil employees of the Government. Now, you were speaking about accidents, and I suppose it is pertinent to ask you some questions about accidents. This bill you have here has to do with perfecting the inspection system so as to make travel safer?

Mr. WILLS. Yes, sir.

Mr. O'SHAUNESSY. You are an engineer, I believe?

Mr. WILLS. Yes, sir; of 36 years' actual experience.

Mr. O'SHAUNESSY. What restrictions or examinations are required, or what supervision is there over the employee of a railroad company, so far as his relations to the safety of the traveling public is concerned?

Mr. WILLS. I will say that there is probably no man to-day in the United States in any class of service, I care not what it may be, who has to undergo the rigid examination that a man has to undergo to become a fireman or brakeman or to become a locomotive engineer or a conductor. At the very start they are examined in regard to their general character. They must pass as to their general character, and then they are examined with regard to every physical condition that can be imagined, as to hearing and eyesight, especially.

Mr. O'SHAUNESSY. I want to ask you something about accidents that are investigated. Where they are investigated, are the majority of them found to be due to defective machinery or to the human equation?

Mr. WILLS. I would not want to attempt to say, because I have not the figures to show.

Mr. O'SHAUNESSY. Are many of them due to the lack of physical condition, or proper physical condition, on the part of the men?

Mr. WILLS. I think not.

Mr. O'SHAUNESSY. I mean the physical condition of the men themselves.

Mr. WILLS. I think not, because of the rigid examination that they must undergo from time to time.

Mr. O'Shaunessy. For instance, a man will lay off in a certain city, and he is supposed to take a certain number of hours of rest. He comes back and takes control of his engine, pulling a train carrying so many people. Now, what is the guaranty to the public that he has done something in the way of resting himself? Suppose he has 8, 9, or 10 hours in which to rest, while, as a matter of fact, he rests but an hour or two, and then goes back and takes control of the engine. Is there anything to prohibit him from doing that?

Mr. Wills. There is nothing that takes away his rights as an American citizen simply because he is an employee of a railroad company. Of course his own life is at stake.

Mr. O'Shaunessy. Then, the only thing there for the protection of the public is the man's own sense of justice or his conscience?

Mr. Wills. That is all I know of. I really do not know what you are aiming at. I will say this, that there is no law that requires a man to go and serve a certain number of hours in bed, and there is no one who stands guard over him and sees that he does that.

Mr. O'Shaunessy. Some one was telling me not long ago that when the company puts a man in charge of an engine who is not in fit condition there is some fine imposed. I have not had time to look it up.

Mr. Wills. Not that I know of. What I attempted to tell you in answer to the first question you asked me is that the man must be so well known that his general character in every way can be certified to before he enters the service, and from that time on he is examined from time to time.

Mr. O'Shaunessy. Does a man when he comes in to take charge of an engine register at all, or does he enter his name upon a book?

Mr. Wills. That is the general rule.

Mr. O'Shaunessy. What kind of entry is that? Describe it, please.

Mr. Wills. That register shows that he is there at a certain time, or when the rules require him or when he is called by a watchman——

Mr. O'Shaunessy (interposing). Does it show how long he has been on duty? Does that entry show that he came off and went on at a certain time?

Mr. Wills. No, sir.

Mr. O'Shaunessy. There is nothing to show that fact?

Mr. Wills. No, sir.

Mr. O'Shaunessy. Then how is the public protected, so far as the employee is concerned?

Mr. Wills. I do not understand you. You ask your questions so fast that I fail to follow you.

Mr. Winslow. Suppose, in the case that Mr. O'Shaunessy mentions, a man has 11 hours off duty in which to rest, and he sees fit for any reason not to take sufficient rest, but goes blear eyed to his engine, and a wreck occurs in consequence of the fact that he can not see straight. Is he held accountable for any damage or injury arising therefrom, or does the railroad get all of the blame?

Mr. Wills. I think the facts are later brought out when a case of that kind occurs, and the railroad companies are in a position to protect themselves.

Mr. Winslow. I presume that is so. Is there any law to punish that man for not having been in a proper condition, or is the company the only one that is made to suffer?

Mr. Wills. I do not know all of the law.

Mr. WINSLOW. So that, as between the public and that engineer and the railroad there is no responsibility in law on the part of the engineer who may have wrecked a train in consequence of not having taken sufficient rest, but the railroad is held accountable for it; is that the way it stands?

Mr. WILLS. I suppose the railroad companies are accountable for whom they employ.

Mr. WINSLOW. We will assume all that, but let us stick right to the question.

Mr. WILLS. I will first have to comprehend what your question is.

Mr. WINSLOW. I will try to make it clear, because this is quite important. If a man has not taken sufficient rest to put himself in proper condition to run his engine, and he gets into the cab and runs that engine and trouble results in consequence of his being out of condition, who is held liable for that accident under any law that you know anything about?

Mr. WILLS. I suppose the railroad company is.

Mr. WINSLOW. There is no way of coming back on the man?

Mr. WILLS. Not that I know of.

Mr. CAREW. Do you mean criminal liability or civil liability? I think when the man is liable, that contention is made by the company——

Mr. ESCH (interposing). There may be criminal prosecutions of employees for criminal negligence.

Mr. CAREW. The gentleman suggested that a man could come around in a blear-eyed condition, suggesting, I suppose, that he would be in some way or other intoxicated, and take charge of an engine. I am quite sure that under the local statutes of New York a man who took charge of a locomotive in that condition could be punished.

Mr. WILLS. My understanding is that a railroad company that will allow that condition to exist—I do not think there is a possibility of that condition existing.

Mr. CAREW. Of course, we have a practical guaranty as to the general character of the men, and I presume that the men who run the engines are of good character. I know, in fact, that in most cases they are men who do not use intoxicating liquor. Now, don't you think it possible to devise some way or other by which the man who takes charge of one of those engines may be subjected to some kind of inspection or examination to determine his physical condition at that immediate time; that is, his nervous condition, his condition in regard to fatigue, etc.? Would it not be possible to have the engineer, before he assumes charge of his engine, to be physically tested in some way or other to determine his resistance?

Mr. WILLS. As all things are possible, it might be.

Mr. CAREW. Do you see any reasonable objection to that?

Mr. WILLS. It would work an inconsistency, to my notion.

Mr. CAREW. An inconsistency where, or in what respect?

Mr. WILLS. That I, as an engineer, should have to undergo some kind of examination before I could take charge of my engine.

Mr. CAREW. Why should not that be required, when you have 500 lives in your care?

Mr. WILLS. I would be willing to do it if they would give me the time and opportunity to do it, and would pay me in proportion to

the duties and responsibilities that I was to assume. I would be perfectly willing to do it, but it seems to me that it would be an inconsistency.

Mr. CAREW. That, of course, could be provided for. It would have to be taken during the resting time, I presume, but I do not think it would take very much time. The test that they would apply to determine a man's nervous condition, physical condition, his condition as to eyesight, hearing, etc., I presume could be taken in less than half an hour.

Mr. WILLS. I presume it might perhaps be done, but here is the difficulty——

Mr. CAREW (interposing). Now, one other question: Do you think that enough injury has been caused because of the lack of such a provision as to require it now?

Mr. WILLS. No, sir. If I thought it would be in the interest of safety to life and limb and that it would be a consistent thing to do, I would be glad to advocate it, but, from my standpoint, I do not——

Mr. CAREW (interposing). You do not think it necessary?

Mr. WILLS. No, sir.

Mr. CAREW. There has not been enough damage caused by the absence of such a provision to require it?

Mr. WILLS. No, sir. I want to say this, that wherever there is a suspicion that such a condition could exist, so far as my knowledge goes, there is noise enough made about it through the public press and in other ways to condemn a very large proportion of the men who occupy these positions——

Mr. O'SHAUNESSY (interposing). I think what prompted my question was the fact that I read in one of those reports of the investigation of an accident—I can not specifically state what accident it was—where the engineer had spent his time off duty at home with a sick wife or child. The statement was that he had not had sufficient rest and sleep when he took charge of his engine. Now, to my mind one accident of that kind is sufficient reason for any legislation that would make travel safer. I would not want to have two, but one would be sufficient for me. I want to ask you, if you appear before the committee again, to give us some enlightenment upon the method or practice followed in the matter of engineers certifying, when they take charge of their engines, as to what time they knocked off work and what time they bagan work.

Mr. WILLS. Different railroad companies have different rules governing what a man shall do before taking charge of an engine.

Mr. O'SHAUNESSY. What is troubling me is this: In a great many of these investigations I believe they have found the accident to be due not to the fault of any device, but to the fault of the men.

Mr. WILLS. That is very apt to be the case, especially when the man is dead.

Mr. O'SHAUNESSY. I do not understand you.

Mr. WILLS. That is very apt to be the case, especially when the man is dead.

Mr. ESCH. Before an engineer is employed by a railroad company he is subjected to a physical examination and test as to color blindness, etc.?

Mr. WILLS. Yes, sir; and from time to time after he is employed.

Mr. ESCH. How often thereafter is he physically examined?

Mr. WILLS. Whenever he is promoted from one grade to a higher grade, they usually give him a thorough examination, and whenever anything happens on the line of the railroad where it appears that it might be that the occurrence was because of a lack in eyesight, a lack in hearing, or a lack in any other faculty, he is at once taken out of the service and examined, as a general rule. He must pass a thorough physical examination before he returns to the service again. So that there is as nearly perfect protection provided as can be given, I think, by the periodical examinations given to the men from time to time when they are promoted and from time to time when anything happens indicating that there is the least lack in respect to any of their faculties.

Mr. O'SHAUNESSY. How long does an engineer work per day? What is his tour of duty, or how many hours does he work?

Mr. WILLS. Do you mean how long does he work?

Mr. O'SHAUNESSY. Yes; what is his day's work?

Mr. WILLS. Twenty-four hours.

Mr. STERLING. It is 16 hours out of 24, is it not?

Mr. WILLS. It is limited by law to 16 hours, or they can go 16 hours without a penalty being placed upon the company. We have recently asked Congress to assist us in making or providing a minimum fine of $100 for the violation of that law. The railroad companies violate that law whenever it is to their interest to do so, and simply pay the fines, which, in some instances, amount to 1 cent, as they have been imposed by the judges.

Mr. STERLING. Are these violations growing less frequent?

Mr. WILLS. Yes, sir; because we have been contending for a minimum fine of $100.

Mr. O'SHAUNESSY. You say that a day's work is 16 hours?

Mr. WILLS. The railroad company can not work its employees over 16 hours, except under certain conditions, without incurring a fine.

Mr. O'SHAUNESSY. I thought a day's work was 9 or 10 hours.

Mr. STERLING. That is for telegraphers.

Mr. O'SHAUNESSY. The engineers work 16 hours a day?

Mr. STERLING. That is the maximum day's work.

Mr. O'SHAUNESSY. How long do they work as a general rule?

Mr. WILLS. During the last few years, since the 16-hour law went into effect, they have been working the men in the freight service, as a general proposition, from 12 to 14 hours. Fourteen hours' service is what I think the railroad companies are aiming to get out of their men in the freight service. In the passenger service they can not do that.

Mr. O'SHAUNESSY. What are the hours in the passenger service?

Mr. WILLS. They can not do that in the passenger service. The run between here and New York, for instance, is five or six hours; they go there, have a short lay-over, and return here.

Mr. O'SHAUNESSY. When a man lays over on a trip, such as that five or six hours run to New York, does he lay off there for so many hours before taking charge of his engine again?

Mr. WILLS. No, sir; there is no limit——

Mr. STERLING (interrupting). Is a trip from here to New York and back in 24 hours a day's work for an engineer?

Mr. WILLS. Not as a rule.

Mr. STERLING. Does he make that trip for two days, and then lay off for an entire day?

Mr. WILLS. There is no established rule. A man may go to New York to-day and come back to-morrow, and follow that schedule every day for five or six days in the week, at the convenience of the company; then, again, he may go to New York and back to-day, and lay over here to-morrow. It depends upon the conditions, and the companies arrange that matter to suit themselves.

Mr. RAYBURN. As a general rule, they are not on duty for 15 or 16 consecutive hours?

Mr. WILLS. Not generally, did you say?

Mr. RAYBURN. Yes.

Mr. WILLS. No, sir; that is not the general rule.

Mr. RAYBURN. Nor even 14 hours? They usually are on duty 7 or 8 consecutive hours, are they not?

Mr. WILLS. Fourteen hours in the freight service might be called the general rule.

Mr. RAYBURN. I am talking about the general practice. It is not the general practice to put a man on an engine and keep him there for 12 hours, is it? Is that usual?

Mr. WILLS. It is nothing unusual.

Mr. RAYBURN. Is it a usual thing that when a man takes his engine out on a trip he will be on duty 7 or 8 hours? Is that about the average?

Mr. WILLS. That might be the average in the passenger service, but you would find very few men in the freight service that would come off their runs in that time, except under extraordinary conditions.

Mr. HAMILTON. Did you say they worked 14 hours in the freight service?

Mr. WILLS. It is nothing unusual for them to stay on duty 14 and 16 hours.

Mr. CAREW. Is there any law that specifically and emphatically regulates that?

Mr. WILLS. There is a law, but it has so many provisos in it that it almost amounts to nothing.

Mr. CAREW. Why is it that you people have not devised a better law or made suggestions with a view to having a better law? I would not tolerate such a system.

Mr. WILLS. That is what former Speaker Cannon told me once, and he scolded me quite severely about it. Then, when I asked him if he would help us out in our efforts for a 12-hour law, he told me very frankly, no. He had changed his mind.

Mr. CAREW. You had better get to work on it, because there are other Congressmen besides Congressman Cannon.

Mr. RAYBURN. Does the law provide that a man can work 16 hours consecutively and no longer?

Mr. WILLS. No, sir; it provides that, except under certain conditions, a man must not work over 16 consecutive hours nor over 16 hours in the aggregate in a 24-hour period without allowing him to be "off duty," but the provisos in there practically nullify the whole law, and, although there are a few cases where the companies are prosecuted for violating that law, in some instances they have been fined as much as 1 cent.

Mr. RAYBURN. Would it be possible to operate a train service if there were an iron-clad law regulating that?

Mr. WILLS. It would not be consistent, and the employees would not want such a law as would provide that a man could not remain on duty under certain conditions.

The CHAIRMAN. I think the public has been advocating that, to my personal knowledge, for the past 20 years. I have served on several all-night conferences trying to amend that law, but the other conferees were obstinate.

Mr. SIMS. Was not this the great difficulty experienced when trying to legislate on this subject; that is, that the railroads had been so constructed in the first place and the ends of the divisions so arranged that the engineer could not take his rest, or reach the place where he could take his rest, without remaining on duty 14 or 16 hours? Was not the condition such that that could not be done without reconstructing the ends of the divisions where the roundhouses were located? Was it not contended that they were compelled to serve longer hours than would have been the case if the railroads had not been built in that way?

Mr. WILLS. It has not been due so much to that as it has been to the increased tonnage of the trains. The tonnage of the trains has been increased to the extent that they have to move very slowly in order to haul the heavy tonnage, and then they must keep this heavy tonnage out of the way of other trains, and give the right of way to the fast trains. That condition, more than any other one, has required long hours.

Mr. CAREW. That could be obviated only by having more men.

Mr. DECKER. I have noticed when traveling on the train between here and St. Louis that they changed engines, it seemed to me, every three or four hours.

Mr. WILLS. I think they do.

Mr. DECKER. I think they change at Terra Haute——

Mr. WILLS (interposing). That would be in the passenger service, however.

Mr. DECKER. Whenever they change engines, they change engineers, too, I presume?

Mr. WILLS. Yes, sir; as a general rule.

Mr. DECKER. Does one man run from St. Louis to Terra Haute, and would he work any more that day?

Mr. WILLS. There is no rule that any railroad company has in regard to that. They arrange it to suit their convenience. It may be convenient for them to run a man from here to Philadelphia, turn him around, and run him back again, and that would be his regular run for the day. Another man might run from here to New York, stay there five hours, and then come back, while another man might go to New York and back on the same day. That depends upon the convenience of the company.

Mr. DECKER. What Congress should do would be to put a maximum on it. You could not devise a scheme by which you could apply an ironclad rule, could you?

Mr. WILLS. No, sir; because that would be a great inconvenience to the public. In case of an accident, wreck, or snowstorm great inconvenience would result if the engineer were not allowed to work

more than 16 hours when it was impossible to relieve him. Now, speaking of hours of service, the last run I had on a locomotive was 202 miles. That was my run, and my time card was 3 hours and 55 minutes.

Mr. ESCH. That was a passenger train?

Mr. WILLS. It was a mail train. The time was 3 hours and 55 minutes for 202 miles.

Mr. STERLING. You went there and back in 24 hours?

Mr. WILLS. Yes, sir; making 404 miles.

Mr. STERLING. You did that every day?

Mr. WILLS. No, sir.

Mr. STERLING. You laid off on alternate days?

Mr. WILLS. I would go there and back in one day and lay off two days. Then I would go out one day, come back the next, and lay off three days. No man living could stand a run of that kind every day, although we have some men who seem to be made pretty nearly of spring steel.

Mr. STERLING. I know personally a good many engineers, and I know some of them who run from Bloomington to Chicago every day, and the distance is 126 miles.

Mr. WILLS. They may go for two days and then lay off a day. You could hardly find a case where a man would be permitted to run 225 miles every day.

Mr. ESCH. Coming back to the bill, this committee only about 3 weeks ago reported out a bill increasing the pay of the superintendents of the various lighthouse districts to $3,000. There are 19 of such districts, and their duties are somewhat similar to those of the boiler inspectors.

The CHAIRMAN. If you will pardon me, the Secretary stated that under the terms of the bill he would attempt to equalize the salaries so that they would average $2,700.

Mr. ESCH. Only one would get $3,000. My point was that we might be asked to state your contention as to why these inspectors should be allowed this increase.

Mr. WILLS. We are quite sincere in stating that the work that has been accomplished and the efficiency that has been shown by the force that is doing the work entitle them to favorable consideration.

Mr. RAYBURN. You think that men capable of doing this work are worth more than $1,800 a year?

Mr. WILLS. Yes, sir; and we feel that we are justified in saying that no law ever enacted by Congress has brought more prompt and better results than has been brought so far by the boiler-inspection law.

The CHAIRMAN. I do not apprehend there would be much resistance to that raise from $1,800 to $2,400, but how many are there who are to be raised from $3,000 to $4,000?

Mr. WILLS. Three, and two from $4,000 to $5,000.

Mr. SIMS. In the whole United States?

Mr. WILLS. Yes, sir; and they are men who, we believe, have made a good showing in every particular. I will say, and I can say it without violating any confidence, that I have talked to several members of the Interstate Commerce Commission, and I believe we will have their hearty cooperation in the request that we have made.

Mr. Decker. Take the $4,000 men: Do you know them personally?

M. Wills. Yes, sir.

Mr. Decker. What has been their history and avocations in life, and what is their fitness for these positions?

Mr. Wills. Mr. Borland, who is the Assistant Chief in the Safety Appliance Division, had been a locomotive fireman and locomotive engineer for many years. He went into the service of the Government in the Interstate Commerce Commission and was Secretary of the Train Control Board that was created some years ago by act of Congress and, I think, upon the recommendation of this committee. They pass upon safety devices. Mr. Borland had many years experience as secretary of that board, and when the Safety Appliance Division of the Interstate Commerce Commission was created, Mr. Borland was made assistant chief inspector because of his qualifications for that position. I do not believe there is any man in America to-day who would question Mr. Borland's qualifications. I think he is to-day perhaps preeminently the best qualified man for the position that he holds you could find.

As to the assistant chief inspectors in the Locomotive Boiler Inspection Division, one of them, Mr. A. G. Pack, was a locomotive fireman for many years, a locomotive engineer for many years, served the Government as a district inspector in the locomotive inspection division for three years, and when a vacancy occurred through the death of the chief inspector, one of the assistants was promoted and he, one of the district inspectors, was promoted to asssitant chief inspector because of his peculiar fitness for the position. He was selected and recommended to the President of the United States by the Interstate Commerce Commission, as well as your humble servant, and was appointed to that position. The other assistant chief inspector, Mr. G. P. Robinson, was the chief inspector of the New York State boiler inspection service and had had experience there. He is a man who was qualified for the position when he was appointed and has proven himself well qualified in every particular. He is a graduate of a technical school and, with the practical men, makes, we believe, the best possible combination.

The chief inspector of the Locomotive Boiler Inspection Division, Mr. Frank McManamy, was a locomotive fireman, a locomotive engineer, worked for the Scranton School for several years, was one of their experts on boilers, wrote some of the lessons they taught when they taught boiler making, and held boiler examinations. He wrote their technical school work for them, and then served the Government as a safety-appliance inspector until he was appointed assistant chief inspector when the boiler-inspection law first went into operation, and on the death of the chief inspector he was promoted because of his peculiar qualifications to chief inspector. I want to say I do not believe there is a man in the United States to-day who knows him and who has dealt with him but what will say he is peculiarly and fitly qualified for the position he holds. He is a man in every respect, I believe, preeminently qualified for the position. Mr. H. P. Belnap is the Chief of the Division of Safety. He served many years as a brakeman and conductor, later as an inspector of safety appliances for the Government, and when the Division of

Safety was organized he was selected by the Interstate Commerce Commission because of his recognized abilities and fitness for the position. I believe he is well known to you gentlemen.

Mr. STERLING. Now, Mr. Wills, let me ask you a question. Does the Federal inspection service and the State inspection service duplicate any of this work?

Mr. WILLS. Not as a general rule. They do work together in some instances, but the Federal inspectors, of course, are recognized as being the authority, because they only deal with matters that are interstate commerce or directly in connection with interstate commerce.

Mr. STERLING. Do the State inspectors confine their work to engines that operate wholly within the State?

Mr. WILLS. I do not think they have been called upon to do that. There has never been any question raised, to my knowledge, concerning that point. They are asked for advice, but so far as any question of authority is concerned, I do not know that that question has ever been raised.

Mr. O'SHAUNESSY. Have the men who are now boiler inspectors in the Government service retained their membership in the union?

Mr. WILLS. I may say, and I think it is quite pertinent in connection with the boiler-inspection service, about one-third of the men there have had experience as boiler makers, about one-third of them have had experience as machinists, and about one-third of them have had experience as locomotive engineers, although they were appointed from a large number of applicants. When the law went into force they were taken because of their having passed the civil-service examination, and the result was that they obtained about one-third of them from each of those classes.

Mr. O'SHAUNESSY. I was trying to get the connection between this body and your representing them as connected with the locomotive engineers' union, I suppose.

Mr. WILLS. I think there are several of the inspectors who belong, perhaps, to either the Brotherhood of Locomotive Engineers or to the Brotherhood of Locomotive Firemen and Enginemen, but I have no accurate knowledge as to that.

Mr. O'SHAUNESSY. You have a commission from them to ask for this bill?

Mr. WILLS. I have had no application from them asking us to do so; but I have said to them by letter that we were asking for this, and I have sent them a copy of the bill. I have sent that to each district inspector and each safety-appliance inspector, so they might know what we were doing.

Mr. O'SHAUNESSY. Whose bill is this, in the sense of who wants it? It is not the engineers' union, but these men in the Government service?

Mr. WILLS. No, sir. You mean who are asking for the bill?

Mr. O'SHAUNESSY. Yes.

Mr. WILLS. It is the Brotherhood of Locomotive Engineers, the Order of Railway Conductors, the Brotherhood of Railroad Trainmen, the Brotherhood of Locomotive Firemen and Enginemen who are asking for this change, because we are the ones who are being protected by the law, and we are the ones who had the bills introduced which created the division of safety appliances and the boiler-

inspection and locomotive-inspection divisions as they are in operation now. We might say, perhaps, that our organizations were instrumental and were behind those bills. We feel that we are directly interested in being protected, and for that reason we ask that these safety-appliance men and boiler inspectors be given this increase. They have not come to us and asked us to do this, but we have said to them that we are asking that they be given this increase.

Mr. O'SHAUNESSY. How do they feel about the bill?

Mr. WILLS. So far as I know, they would feel very grateful if Congress would grant them what I think they feel they are justly entitled to.

Mr. O'SHAUNESSY. My belief is that we ought to have a direct expression from them.

Mr. CAREW. They are too modest, I assume.

Mr. WILLS. I believe the good work they are doing will continue just the same if you gentlemen do not find it consistent to give them the increase in pay. I believe they are the class of men who do the best they can because it is right to do it.

The CHAIRMAN. Mr. Wills, I think the committee would like to to know whether these people really need this increase or whether they simply feel they could spend it conveniently if they had it.

Mr. RAYBURN. In other words, these men are getting $1,800 a year and hold very responsible and important positions?

Mr. WILLS. Yes, sir.

Mr. RAYBURN. Do you fear, if these very efficient and capable men do not get this increase, they are likely to be called to some other place?

Mr. WILLS. We are sure of that. We are sure that to-day there are a number of offers and the men are waiting to decide whether or not they will accept the offers.

The CHAIRMAN. Then we can not hold them at the present salaries?

Mr. WILLS. Not all of them; I am sure of that.

Mr. CAREW. Are there many candidates for their places?

Mr. WILLS. Yes, sir.

Mr. SIMS. As bearing on this question of what we pay Government employees for their work and what men performing similar work on the outside receive, I understand it to be a fact, although I do not know that it is a fact, that two of the executive officers of one of the street car companies in Washington each get a salary of $25,000 per annum. It is a public utility corporation, and of course, makes its money by collecting fares and selling its service just like a railroad company does. Now, I can not for the life of me see that the performance of a service connected with only one of the street car companies of Washington City should be worth $25,000 to two of its officers, and yet the service of the chief inspector for the whole United States is not worth $5,000.

Mr. WILLS. I have said before, and I want it understood, that the district inspectors and the safety appliance inspectors have not made any direct application to us to ask for an increase in pay, but we have said to them that we are doing it, and I have had correspondence with a number of them because of the fact that they have been sent a copy of this bill.

The CHAIRMAN. I want to ask Judge Sims if it would not be more equitable and just if we could find some way to reduce the gratuity paid these $25,000 men he mentions?

Mr. SIMS. I spoke of that in relation to the probability of the Government continuing to lose its best men by reason of the higher salaries offered by private companies doing the same character of service.

The CHAIRMAN. Of course, to the ordinary man it looks like a huge joke to pay a man $25,000 to preside over one of these street railways.

Mr. SIMS. I understand that two executive officers of one of the railway companies in the District of Columbia, which is only 10 miles square, get $25,000. I do not state that as a fact, but that is my information.

Mr. STERLING. What do these men do who leave this service and go into the service of the railway company?

Mr. WILLS. There was one man who left the service of the Government not long ago and went into the service of a railway company as superintendent of motive power.

Mr. MONTAGUE. At what increase of salary?

Mr. WILLS. In that particular case I was told at just twice the salary he was getting. He was getting $1,800 from the Government and the railroad company gave him twice that amount.

Mr. STERLING. What did he do when he was in the service of the Government? Was he a boiler inspector?

Mr. WILLS. Yes, sir.

Mr. STERLING. Are the duties of the boiler insepctors limited to the inspection of boilers or do they inspect the brakes and the couplers and all the safety appliances?

Mr. WILLS. No. Under the present law they inspect the entire locomotive, although there are portions of the equipment on a locomotive or tender which formerly came, and do now come, under the safety-appliance law, and the work, as I understand, has been agreed upon by the commission. The commission has authority in that matter, so there will not be any duplication of work. The boiler inspector or the locomotive inspector inspects the entire locomotive and tender, so that that saves duplicating the inspection of the brakes, which formerly was done by the safety-appliance inspector.

The CHAIRMAN. Mr. Wills, do you want to talk about any other bill now?

Mr. ESCH. Mr. Chairman, I think the bill we are now considering is not drawn properly. You will notice it simply says, line 13, section 3, strike out the word "four" and insert "five," and so on. It ought to have a final section saying, "so that said section as so amended shall read, etc."

The CHAIRMAN. We can fix that when we come to consider the bill in detail.

Mr. SIMS. As I understand it, if we decide to grant these increases, none of the increases come out of the railroads; they pay no part of it?

Mr. WILLS. No, sir.

Mr. MCNAMARA. Mr. Chairman, before you take up the other bill I would like to say that these inspectors are not as bad as some people would have you believe. I believe you all know about the congestion of freight which has existed for some time between Jersey City and Boston, and I presume you are also acquainted with the fact that at the present time there are a number of inspectors down there, and they have been mighty successful in cleaning up that work, which

goes to show that there is some ability in those men which possibly was not possessed by some of the officials of the railroads getting more salary than they are getting.

Mr. Sterling. How does that come within their jurisdiction?

Mr. McNamara. It was by a special rule of the commission and also by both Houses, I believe, that the Interstate Commerce Commission would take a hand in that and see if they could not clear up that embargo which existed. They have taken these inspectors down there, and they are working now between Jersey City and New York and all around in there, and they have been very successful in clearing it up, and I presume you will get a report about it later on from the commission.

Mr. Sims. I think there is no doubt but that these men are doing a magnificent service for the money they are getting.

Mr. McNamara. Commissioner Clark and many of the inspectors are down there and the inspectors are giving him the facts, and it requires a man of ability to do those things.

Mr. Wills. Mr. Chairman, I have here quite a lengthy statement in reference to H. R. 10485, which I would like to submit without reading, if I may.

Mr. Sims. What bill is that?

Mr. Wills. The bill commonly called the Sims bill. It is principally in reply to some statements which were made here the other day.

Mr. Sims. Mr. Wills, in your statement in reference to this bill, do you approve or disapprove every portion of the bill, according to your judgment?

Mr. Wills. Not altogether. It is a partial reply to some things that were said here the other day. I asked then for permission to submit this.

Mr. Sims. Do you ask for any amendments or approve or suggest any amendments?

Mr. Wills. No.

Mr. Sims. Are there any amendments you would suggest regarding the bill?

Mr. Wills. No.

Mr. Sims. It is perfectly satisfactory as it is?

Mr. Wills. No, not at all.

Mr. Sims. Then why do you not suggest amendments?

Mr. Wills. Because we do not consider we have any real interest in favoring the bill.

Mr. Sims. Then it is a bill in which you have no interest?

Mr. Wills. Not as favoring it.

Mr. Esch. Do you want to say anything on the clearance bill?

Mr. Wills. No; Mr. Clark has a statement he would like to submit, either verbally or otherwise, if you have time, and I know that Senator Faulkner has asked for some time.

Mr. Faulkner. I will want only a few minutes.

Mr. Sterling. I do not understand you, Mr. Wills. You say you are not speaking for 10485?

Mr. Wills. No, sir.

Mr. Montague. Are you opposed to it?

Mr. Wills. We are certainly not in favor of it.

Mr. Sterling. Do you mean you are neutral in regard to it?

Mr. Wills. No; we are not favoring the bill. We are inclined to be opposed to it, certain parts of it.

The CHAIRMAN. Then suppose you talk about one you are in favor of?

Mr. WILLS. Mr. Clark has a statement with reference to that bill, if you have time to hear it.

Mr. STERLING. This statement which you now submit is with reference to 10485?

Mr. WILLS. Yes.

Mr. MONTAGUE. And that one you are not in favor of?

Mr. WILLS. Parts of it we do not object to, but as a whole we are not in favor of it.

As representatives of the transportation brotherhoods, we had not intended to make a statement with reference to the Sims bill (H. R. 10485), which proposes to confer broad powers upon the Interstate Commerce Commission in connection with the equipment and operation of railroads. However, in view of what was said by Mr. Kruttschnitt and Mr. Atterbury, we have deemed it advisable to beg the indulgence of the committee for the purpose of stating briefly our position on this measure.

The Sims bill is identical with the bill H. R. 16875 introduced in the Sixty-third Congress and known as the Stevens omnibus bill. That measure was given very careful consideration when it was up before, and in the report which we made to the chief executives and the members of the organizations, we stated at some length the action that was taken upon the bill and the reasons why we had not felt that we should lend any support to it.

We have been under the impression that the bill lacked those definite directions to the commission which have heretofore produced beneficial results, and that it would not be wise nor in the interest of safe and efficient railroad operation to pass a blanket bill of this kind that would affect the features in which the engine and train men are particularly interested.

It is noted that section 7 of the Sims bill, relating to the headlight, is retained. This is evidently due to the fact that the bill was put into the hopper without revision, for we understand that the Congress has already conferred upon the Interstate Commerce Commission jurisdiction over the headlight, and therefore the need for a provision of this kind does not now exist.

The Cummins-Goeke bill, extending the boiler inspection law to include the other parts and appurtenances of the locomotive and tender, which was passed at the last session and became a law March 4, 1915, covers the headlight feature.

While the bill was pending before this committee, Senator Faulkner appeared on behalf of the railroads in opposition to it. Page 24 of the hearings on H. R. 17421, July 1, 1914, he is recorded as follows:

There is another question. I desire to call your attention to the fact that this amendment includes the headlight of an engine, as it does all the machinery and appliances.

Mr. Crawford, superintendent of motive power of the Pennsylvania Railroad west, in opposing the bill before the Senate committee [pp. 14 and 15, hearings on H. R. 17894], said:

The passage of the bill now under consideration automatically provides for the headlight of a design, intensity, or make as may be incorporated in the proposed code provided for in the bill.

In the State of Tennessee the employees were endeavoring to secure the passage of a headlight law, and the attorneys for the railroads appeared in opposition to the bill and objected on the ground that Congress had acted upon the subject, and that therefore a State law would, if passed, be ineffective. Mr. Keeble, counsel for the L. & N., in his argument before the committee of the legislature, said:

This is the bill (referring to the Cummins-Goeke bill which he had read) that Mr. Wills, Mr. McNamara, Mr. Clark, and Mr. Fitzpatrick state in their report on page 49 has solved the problem and has given the Interstate Commerce Commission the right to decide the kind of headlight to be used on locomotives on interstate trains. I say that when this bill was passed it took this matter out from the domain of State regulation and the whole locomotive is now under the control of the Federal Government. And when this is done the States must take hands off. That point was thoroughly settled almost 50 years ago when that grand old man, Robert E. Lee, laid down his arms at Appomattax.

That argument defeated the bill in Tennessee. Likewise, in Mississippi where the employees through the organizations were urging the enforcement of the headlight law, representatives of the railroads prevented this on the plea that the matter was covered by the Federal act; and only the other day in Virginia the employees had the rule of the chief inspector, hereinafter quoted, introduced as a bill in the State legislature, but the railroads were successful in opposing it because they said the Federal law applied and it would be useless to pass the State law.

In the State of Missouri the very able commission held in accordance with the contention of the railroads that the Federal law had superseded their State law as it applied to the locomotive headlight, and that the State commission had no authority to require a better headlight on switch engines that were engaged in interstate commerce.

In the State of Illinois the railroads refused to comply with the State headlight law, and in defense of their position maintained that the State statute had been superseded by the act extending the boiler-inspection law. An exhaustive brief was filed by counsel for the railroads, and without reading I would like to have printed in the record that portion of the brief that relates to the scope and effect of the Federal act.

The case is entitled, "T. J. Condon, attorney, *v.* Vandalia Railroad Company; Chicago, Indiana & Southern Railroad Company; The Cleveland, Cincinnati, Chicago & St. Louis Railway Company; The New York Central Railroad Company, and The Pittsburgh, Cincinnati, Chicago & St. Louis Railway Company." Solicitors for the defendants who are on the brief are Loesch, Schofield & Loesch, George B. Gillespie, Edward T. Glennon, Robert J. Cary, Bertrand Walker, and F. Harold Schmitt.

Point 2 of the argument made by the counsel for the defendant companies is as follows [p. 33]:

The Illinois headlight law is a regulation of interstate commerce with respect to the defendants, all of whose locomotives are engaged in such commerce. Congress has taken jurisdiction of the subject matter, and therefore the Illinois headlight law does not affect any of the locomotives of the defendants.

The discussion on this point, which is in turn divided into three subheadings, is found on pages 55 to 82 in the brief and seems to be a very able discussion of the question involved.

The brief [p. 69] after quoting Adams Express Company *v.* Croninger, 226 U. S., 491, in which the Supreme Court ruled upon the effect of the Carmack amendment, states:

The same reasoning is applicable, but with greater force, with respect to the effect upon the Illinois headlight law of the Federal statute amending the "Boiler-inspection act." This will be hereinafter more fully developed in the analysis of the "Boiler-inspection act" and its amendment, from which it appears that Congress has expressly provided that all parts and appurtenances of a locomotive must be safe to operate and has directed the establishment of rules and regulations to be approved by the Interstate Commerce Commission, which rules and regulations shall provide certain tests that the engine, tender, and all parts and appurtenances (which, of course, includes headlights) must withstand or else be withdrawn from service. One of the principal objects of Congress in the enactment of the amendment to the "Boiler-inspection act" must have been, as the Supreme Court stated in the Croninger case, the elimination of diverse State regulations on the subject.

For convenient reference the statements of counsel for the defendant companies defining the scope and effect of the boiler-inspection law and the amendment of March 4, 1915, are assembled:

(P. 75.) It is obvious from this amendment that it was the intention of Congress to assume jurisdiction over every part of the locomotive and tender so far as concerns the operation thereof from the standpoint of safety. "Appurtenances" is defined in Webster's Dictionary as "that which belongs to something else; an adjunct, an appendage," consequently, it can not be argued that the headlight of a locomotive does not fall within the description of an appurtenance and is not a part thereof. To show how clearly Congress has, by the amendatory act, assumed jurisdiction over the question of headlights it becomes interesting to read section 2 of the original "Boiler-inspection act" as quoted above with the necessary interpolations in view of the present amendment.

In its amended form section 2 must be read as follows:

* * * * * * *

The intention of Congress to have the "Boiler Inspection Act," as amended, include everything connected with the locomotive so far as concerns the use or operation of the same from the standpoint of safety, is so apparent from the reading of the act that argument seems unnecessary. The assumption of jurisdiction by Congress is here absolutely definite and specific, as it is provided that all parts and appurtenances of the locomotive must be "safe to operate" in the service so that they may be employed in moving traffic without unnecessary peril to life or limb, and that they all be inspected periodically, and "be able to withstand such test or tests as may be prescribed in the rules and regulations hereinafter provided for."

Page 77, after quoting from Atlantic Coast Line *v.* Georgia, 234 U. S. 280:

In fact it seems as if Congress had directly in mind the regulation of headlights when the amendment referred to was enacted and must have enacted the legislation with a view to covering the situation as referred to in the Atlantic Coast Line case.

Particular attention is called to the following sentence [p. 77]:

A continuation of the analysis of the boiler inspection act substantiates the thought that the amendment thereto is clearly an assumption by Congress of jurisdiction over the subject of locomotive headlights with respect to the establishment of a standard of light.

After quoting sections 5 and 6 of the boiler inspection act, blended with the amendment of March 4, 1915, the brief states [p. 79]:

* * * Every railroad company engaged in interstate commerce is obliged to file with the chief inspector its rules and instructions for the inspection of its locomotives, tenders and all parts and appurtenances thereof; and such rules and instructions must be approved and may be modified by the Interstate Commerce Commission. The complainant (Mr. Condon) argues that the Federal statutes involved only authorize the inspectors to see that any part or appurtenance of the engine or tender is in good repair, but that the inspectors are not authorized also to see that the parts and appurtenances thereof conform to cretain standards, nor for failure to do so may the engine or

tender be ordered out of service by the inspector. This argument is entirely untenable because section 2 of the Federal boiler inspection act, as amended, requires that the locomotive and tender and all parts and appurtenances thereof must "be able to withstand such test or tests as may be prescribed in the rules and regulations hereinafter provided for," and under section 6 of the Federal act, as amended, it is the first duty of the inspector to see that the companies inspect in accordance with the rules and regulations approved by the Interstate Commerce Commission, and that the carriers repair the defects (which certainly includes a deviation from a standard prescribed by the rules and regulations approved by the Interstate Commerce Commission), which such inspection disclosed before the locomotive, tender, or any part or appurtenance thereof are again put in service. Section 6, in its amended form, further provides that if the inspector shall find that the locomotive, tender or any part or appurtenance thereof does not conform to the rules and regulations as approved by the Interstate Commerce Commission, he shall notify the company and said locomotive, tender or part or appurtenance thereof shall not be used until in serviceable condition. Section 9 of the act provides that any carrier violating any rule or regulation made under it provisions shall be subject to a penalty of $100 for each violation.

Particular attention is also called to the following [p. 80]:

After so close a reading of the amended boiler inspection act as above made, it is impossible to reach any conclusion other than that Congress intended to provide for the filing by each interstate carrier, and the approval by the Interstate Commerce Commission of rules and regulations which should, as indicated specifically in section 2 of the act, prescribe certain tests or standard, calculated to insure the safety of operation and to which such carriers' locomotives, tenders and all parts and appurtenances thereof, including headlights, should conform.

The conclusion of counsel for the defendant carriers is as follows [pp. 81–82]:

* * * Congress has in unequivocal language indicated its intention to assume control of the subject matter by conferring upon the Interstate Commerce Commission the authority and duty to establish rules and regulations in this respect, and consequently the control from henceforth must be through the means designated by the Federal statute. While it is not part of the record in this case, it may be here stated, for the information of this commission, that the Interstate Commerce Commission is at the present time endeavoring, under the power conferred upon it by the amended boiler inspection act, to arrive at a proper basis for a standard of locomotive headlights.

We therefore urge upon this commission that under the decisions above quoted, and in view of the unmistakable action taken by Congress, the conclusion must here be reached that even though otherwise valid, State legislation on the subject can no longer control, with respect to locomotives engaged in interstate commerce, but must yield to the paramount authority of the National Government which has now been brought into control by the amendment to the Federal boiler inspection act.

The committee will observe that the railroads, including the Pennsylvania, opposed the locomotive safety law when it was before Congress on the express ground that it covered the locomotive headlight, and that in the States they have succeeded in preventing legislation and in blocking the enforcement of laws in effect upon the assertion that the Federal act applies to the headlight and renders the State laws inoperative; and yet, in the face of this record, and at this late day, Mr. Atterbury comes before this committee and states that the locomotive safety law does not cover the headlight.

Mr. Atterbury would put the employees between the upper and nether millstone. He would evade all law by crawling into the twilight zone between State and Federal control.

We were advised that the bill, while it was pending before Congress, would cover the headlight fully and that the commission would have power under it to promulgate a rule to require a safe and proper locomotive headlight. We regarded the bill as a headlight bill, and so advised our members, and stated to them that no doubt one of the first matters to be considered under the new law would be the head-

light feature. As evidence that this interpretation was accepted by the organizations, and to indicate how the members feel toward the headlight proposition, I wish to quote the following resolution:

[From the convention proceedings Brotherhood of Locomotive Engineers, Cleveland, Ohio, May 22, 1915.]

Whereas, the Federal Congress, on March 4, 1915, passed an amendment to the boiler inspection law, giving the chief inspector and assistant chief inspector, together with all the district inspectors of locomotive boilers the same authority over the entire locomotive and tender, together with all their parts and appurtenances that they formerly had over the boiler and its appurtenances, and,

Whereas, under the provisions of said act as amended it will be the duty of each railroad engaged in the transportation of interstate commerce to submit to the chief inspector of locomotive boilers, within three months from the date of the passage of the amendment, or by June 4, 1915, rules for the inspection and repair of all locomotives and their appurtenances.

Whereas, the Interstate Commerce Commission, who are required by law to approve the rules for inspection, has the power to refuse to approve any rule or code of rules that do not properly provide for the safety of employees and the public: Therefore, be it

Resolved, by the Grand International Brotherhood of Locomotive Engineers, in convention assembled, That the said chief inspector be urged to prepare, and the Interstate Commerce Commission to approve, a rule requiring each railroad company to equip and maintain on each locomotive used in road service a headlight or headlights that will enable the person on the locomotive, with normal vision, and under normal weather conditions, to distinguish a dark object the size of a man on or adjacent to the track, not less than 1,000 feet from the front end of said locomotive; two classification lamps of sufficient size and brilliancy as to be plainly seen from a distance of 2,500 feet, to be used as required by the rules governing train movement; one light for each steam guage and air gauge that will reflect on steam gauge and air gauge only, so as to enable the persons operating the locomotive accurately to read the pressures indicated from their usual and proper positions in the cab; one light for each water glass, which will reflect on water glass only, that will enable the persons operating the locomotive to easily and accurately read the water glass from their usual and proper position in the cab; and at least one light conveniently located in the cab, by which the persons operating said locomotive can conveniently and accurately read their time-table and train orders, this light to be so constructed and maintained that it can be easily darkened or extinguished.

And further, that there be a rule requiring that when locomotives are required to back over any part of the division or district, except in cases of emergency, they shall be supplied with a headlight on back end of locomotive or tender, which will meet the above requirements. *Provided,* That the above rules shall not prohibit locomotives while running through yards and at meeting points from reducing the intensity of headlight to not less than what will enable the persons operating the said locomotive to distinguish a dark object the size of a man not less than 300 feet ahead of said locomotive; this rule not to apply to locomotives used exclusively between sunup and sundown, nor to a case where headlight equipment has failed after starting a trip and can not be repaired on the line nor another locomotive furnished, but such locomotive may continue on trip to such point where another locomotive can be furnished or headlight repaired.

LOCOMOTIVES USED IN SWITCHING SERVICE.

We further request the said Interstate Commerce Commission to require a rule that each locomotive used between sundown and sunup in yard or switching service shall meet all the requirements of lighting that are required of road locomotives, except that yard or switching locomotives shall have and shall use two headlights, one on each end of said locomotive, which will reflect sufficient light under normal weather conditions that will enable the persons operating the locomotive with normal vision to distinguish a dark object the size of a man on or adjacent to the track not less than 300 feet from end of said locomotive; further, that each locomotive shall be provided with two torches and necessary oil and wicks to enable the proper and necessary inspection and repair to be made upon locomotives that are used at nighttime.

Be it further resolved, That our grand chief engineer be authorized to transmit a copy of this resolution to the Interstate Commerce Commission, and Mr. Frank McManamy, chief inspector of locomotives, and to inform them that the Brotherhood

of Locomotive Engineers regard the enforcement of the above rules as being essential to safety to the employees and traveling public upon the railroads, as well as efficiency in traffic movements.

* * * * * * *

The resolution was adopted unanimously, after discussion.

It is a trite old saying that "The mills of the gods grind slow." On March 4, 1915, the bill extending the boiler-inspection law to include the other parts of the locomotive and tender, was approved by President Wilson. By its terms it became effective September 4, 1915. During the interim, and in accordacne with the requirements of the new act, a proposed code of rules for the inspection and testing of the various parts of the locomotive and tender was prepared, and a conference between the representatives of the carriers, the employees, and the chief inspector was held to discuss the proposed rules. This conference lasted throughout the week of August 23. A further conference was held September 25, and an agreement reached upon all rules except the headlight and bell ringer rules. Certain railroad companies, particularly the Pennsylvania and the New York Central, stood out against the headlight rule, and refused to agree to the modification that was suggested.

The chief inspector submitted the agreed rules and also those to which the carriers objected to the Interstate Commerce Commission and recommended that they be approved. This was on September 28.

The matter was set down for hearing, and the hearings lasted five days, including one night session. Stenographic records were kept of all these proceedings.

On October 2, an order of the commission was issued, approving the rules upon which agreement had been reached, and permission was granted for the filing of briefs in review of the hearings on the headlight and bell ringer rules. The carriers filed their first brief, comprising 81 printed pages, November 2. On November 17, the employees filed their reply brief, covering 75 pages, and on the 27th of October, the carriers filed their reply to the reply of the employees. The second carrier's brief covered 46 pages.

The International Acetylene Association asked permission to intervene and file a brief, which was granted. The matter was argued before the full commission on December 4, 1915.

On account of some matters submitted by the chief inspector, carriers asked for permission to file a supplemental brief, and this further delay was granted. This third brief of the carriers was filed December 14, and consisted of 24 pages. The employees had permission to file a reply to the reply of the carriers to the argument of the chief inspector. This brief, which was the final paper in the case, was filed December 24, and covered 22 pages.

The commission has been deliberating since that time. More than a year has elapsed since the law was passed, and the employees are still waiting in patience (?) for their headlight rule. State laws are suspended and nullified. There is no Federal requirement, and we can not come to Congress with a bill because "The commission has the matter under consideration."

The rule recommended by the chief inspector and which is supported by the four organizations, is for a high-power headlight.

The rule, which was prepared by the chief inspector after an exhaustive investigation of the subject, and after actual road tests

were made on locomotives equipped with electric headlights in regular train service, is as follows:

29. *Locomotives used in road service.*—Each locomotive used in road service between sunset and sunrise shall have a headlight which will enable persons with normal vision in the cab of the locomotive, under normal weather conditions, to see a dark object the size of a man for a distance of 1,000 feet or more ahead of the locomotive; and such headlights must be maintained in good condition.

Locomotives used in road service, which are regularly required to run backward for any portion of their trip, except to pick up a detached portion of their train, or in making terminal movements, shall have on the rear a headlight which will meet the foregoing requirements.

Nothing in the foregoing rules shall prevent the use of a device whereby the light may be diminished in yards and at stations, or when meeting trains to an extent that will enable the person or persons operating the locomotive to see a dark object the size of a man for a distance of 300 feet or more ahead of the locomotive under the same conditions as set forth above.

When two or more locomotives are used in the same train, the leading locomotive only, will be required to display a headlight.

31. *Locomotives used in yard service.*—Each locomotive used in yard service between sunset and sunrise shall have two headlights, one located on the front of the locomotive and one on the rear, each of which will enable persons with normal vision, in the cab of the locomotive, under normal weather conditions, to see a dark object the size of a man for a distance of 300 feet or more; and such headlights must be maintained in good condition.

In the place of this rule, the carriers asked to have approved a highly technical formula, which would permit the continued use of the poorest type of oil headlight now in service on any railroad in the United States, and the issue which the commission has taken so long to decide is between these two propositions.

The organizations of employees, because they have by their experience and from their knowledge of actual conditions become convinced that the high-power headlight is necessary to the safe and efficient operation of trains in the nighttime, have secured the passage of headlight laws in 31 of the States. The old style of dirty, dim, oil headlight has been outlawed by the people in more than two-thirds of the States of this Union; but inefficiency dies hard. The Pennsylvania Co. has fought this fight, and they have been, in my opinion, the force that has obstructed the headlight rule that means safety and efficiency in locomotive operation. That company uses the poorest type of oil headlight in the country, and what they are asking the commission to do is to legalize for the entire United States the headlight which they use. Over half of the locomotives in this country are now equipped with headlights that will meet the requirements of the rule proposed by the chief inspector, and the roads that have been backward in this progress are standing in the way. The proposition that is now up to the Interstate Commerce Commission is whether the Pennsylvania Railroad Co. will dominate the entire United Stats or whether that company will bow to the will of the people of this country and adopt this modern appliance in the interest of safety and efficiency.

Mr. Atterbury praised the Bureau of Standards, and he well may, from the company's standpoint.

We have had some little experience with the Bureau of Standards in connection with this fight for a headlight rule, and it may interest the committee, in view of the inference by Mr. Atterbury that the Pennsylvania Co. is in close touch with that bureau, to know what has transpired. I know of no better way to put it before the committee than to submit some correspondence.

OCTOBER 14, 1915.

Hon. WILLIAM C. REDFIELD,
Secretary of Commerce, Washington, D. C.

DEAR SIR: There is a matter of interest and importance to us involving one of the employees of your department which we beg to bring to your attention for such action as you may deem appropriate in the premises and to ascertain if the conduct set forth was authorized or approved.

In accordance with a law passed by the Sixty-third Congress, at the request of the organizations of engine and train service employees the chief inspector of locomotive boilers had recommended for the approval of the Interstate Commerce Commission a provision relating to the use of headlights on locomotives. Representatives of certain carriers had objected to the proposed rule, and the matter was set down for hearing before the commission. The organizations of employees on the one hand supported the recommendation of the chief inspector as being necessary to the safety and efficiency of railroad operation, while representatives of the railroads opposed the adoption of the regulation.

During the course of the hearing, on October 1, 1915, counsel for the carriers called and had sworn as a witness Mr. Eugene C. Crittenden, who stated that he was an employee of the United States Bureau of Standards, and he proceeded to oppose, object to, and criticize the rule. Under cross-examination Mr. Crittenden admitted that he was present at the hearing at the request of the railroad attorneys, but stated he was appearing by permission of the chief of the electrical division of the Bureau of Standards, although that bureau had not been requested to do so, nor had it brought the particular matter at issue to the official attention of the Interstate Commerce Commission.

A record was made of the entire proceedings, and portions of Mr. Crittenden's testimony relating to his appearance are herewith quoted for convenience:

"Mr. CARTER. Mr. Crittenden, I am led to believe that your principal objection to the rule proposed by the Bureau of Locomotive Inspection is that the distinction or requirements are not scientific.

"Mr. CRITTENDEN. I do not know whether they are scientific or not. I object to them because they are indefinite * * *.

"Secretary McGINTY. Has any representative of the commission submitted this rule to the Bureau of Standards?

"Mr. CRITTENDEN. I think not this particular rule, so far as I am aware * * *.

"Secretary McGINTY. Mr. Crittenden, you have, in several instance, referred to the desire of the Bureau of Standards respecting the correctness of rules, etc. Will you please state into the record, for the information of the Interstate Commerce Commissioners, whether or not you are appearing here by direction of the Bureau of Standards?

"Mr. CRITTENDEN. I am appearing by permission of the chief of my division, who is Dr. Rosa, the chief of the electrical division, which includes photometry, or the measurement of lights. I have not talked with the attorney (director) about this particular question or about coming here this morning, but I have talked with him about the question of obtaining a uniform and definite rule for headlight regulations.

"Secretary McGINTY. In connection with the operation of steam railroads?

"Mr. CRITTENDEN. Yes, sir.

"Secretary McGINTY. But you have not discussed with him this particular rule proposed by the division of boiler inspection?

"Mr. CRITTENDEN. This rule, in its exact form, I never happened to see or hear until this morning.

"Secretary McGINTY. You do not know whether the Bureau of Standards has brought this particular matter to the official attention of the Interstate Commerce Commission or not?

"Mr. CRITTENDEN. I do not think they have been asked to, except in an informal way. Certain representatives of the Interstate Commerce Commission have come to the bureau and discussed possible forms of rules and mentioned that they were intending to put a rule in this general form, but the exact terms were not stated.

"They stated that the general requirement would probably be a requirement that an object the size of a man should be visible a certain distance, but the exact distance was not mentioned. * * *.

"Mr. McMANAMY. Have you read the locomotive-inspection law?

"Mr. CRITTENDEN. I have not.

"Mr. McMANAMY. You are not familiar with the requirements of the law?

"Mr. CRITTENDEN. No; my interest has been only in measuring these lights, and I am not at all informed on matters of locomotive operation.

"Mr. McMANAMY. You do not know, then, that the law specifically prohibits, or prevents, rather, the division of locomotive boiler inspection from designing headlights?

"Mr. CRITTENDEN. No; I do not know it. However, I would not assume it to be their duty to do so.

"Mr. McMANAMY. Your testimony here has been largely along the line of figuring specifications, so that a headlight might be designed or ordered to meet them. Is not that true?

"Mr. CRITTENDEN. Practically; yes. Certain requirements should be established so that a man can say—can test it and say whether or not it fulfills the requirements.

"Mr. McMANAMY. But you do not know whether, under the law, that duty is on the railroads or on the Interstate Commerce Commission?

"Mr. CRITTENDEN. Under the law, I do not know.

"Mr. McMANAMY. You stated that your objection to the proposed rule was because of its indefiniteness?

"Mr. CRITTENDEN. Yes.

"Mr. McMANAMY. You do not object, then, to the proposed rule?

"Mr. CRITTENDEN. Yes; I object, as far as it is any of my business. * * *.

We do not wish to burden you with a statement of the merits of the controversy from our viewpoint nor to comment upon the weight to be given the testimony of Mr. Crittenden; but we may say that laws similar to the rule proposed by the division of the commission have been passed in 31 of the States and the form of the rule is practically the same as the laws in at least 11 of the States which are being successfully enforced.

The railroad employees have heretofore had no cause to question the fairness and disinterestedness of the Bureau of Standards and we would regret exceedingly should anything occur to cause us to in any degree lose our high opinion of that bureau. You will appreciate, however, that the usual difficulties encountered in securing proper safety appliance regulations are all that the employees feel that it is right and just they should be required to overcome, and that they would naturally resent being obstructed by a department of the Government which is not directly interested in the matter, and which has not been officially requested or authorized to pass upon the question. In the present instance, the 350,000 employees engaged in engine and train service throughout the country are strongly in favor of the rule as proposed by the division of the Interstate Commerce Commission in exact form as recommended; in fact, the organizations in their conventions and otherwise have taken decisive action favoring the promulgation of this rule.

In view of the apparent disposition of the Bureau of Standards, as manifested by this action, to serve the desires of certain railroad companies in this matter, we would, of course, oppose any attempt to substitute for the rule recommended by the division which is authorized and directed by Congress so to do any proposition volunteered by some person in the Bureau of Standards who had previously indicated a close sympathy with the purposes of certain carriers to bring about the defeat or emasculation of the clear and workable proposal of the chief inspector. A rule which would meet the objections of Mr. Crittenden and certain carriers would in effect require that all alleged violations be passed upon by the Bureau of Standards or other establishments equipped to conduct highly technical headlight tests, thus making of each case a contest between experts; whereas the rule proposed by the chief inspector makes it possible for the Government inspectors of locomotives to easily determine by practical service test whether the headlight meets the requirements of the law. We believe this latter was the system of enforcement contemplated by Congress.

I may say also that protest against the appearance of Mr. Crittenden in the manner recited has been lodged with the Interstate Commerce Commission.

We wish to respectfully ask that we be informed whether or not the appearance and action of Mr. Crittenden was authorized or approved by the Bureau of Standards, and whether it is the purpose of that department to oppose legislation in the interest of the safety of employees and travelers upon railroads.

Yours, respectfully,

H. E. WILLS,
A. G. C. E., and National Legislative Representative.

DEPARTMENT OF COMMERCE,
OFFICE OF SECRETARY,
Washington, October 23, 1915.

Mr. H. E. WILLS,
National Legislative Representative, Brotherhood of Locomotive Engineers,
101 B Street SE., Washington, D. C.

DEAR SIR: Your letter of October 14, 1915, regarding the testimony given on October 1 by Mr. E. C. Crittenden of the Bureau of Standards at a hearing of the Interstate Commerce Commission on the subject of a proposed regulation for railroad headlights, has received my careful attention, and I have taken up the matter with the director of that bureau.

Regarding the circumstances under which Mr. Crittenden appeared at the hearing the portion of the record which you quote seems to be in accord with the report of the bureau, and I may say that his appearance under these circumstances was due to a misunderstanding which I shall explain later. A copy of the record of that part of the hearing which includes Mr. Crittenden's testimony has been requested from the Interstate Commerce Commission. Until this has been received and considered, it is impossible to say how accurately Mr. Crittenden may have stated the position taken by the higher officials of the Bureau of Standards.

I can, however, give definite answers to most of your questions. Beginning with the last one, I would say that it is most certainly not the purpose of that bureau or of this department to oppose legislation in the interest of the safety of employees and travelers upon railroads, but on the contrary the Bureau of Standards is particularly interested in the promotion of all movements for greater safety in all industries. In the performance of this duty, however, it acts in an advisory capacity and seeks to cooperate with other agencies. In the matter of headlights in particular I am informed that the Bureau of Standards has refrained from expressing any opinions with regard to the kind or power of the light which should be required. This is a question for practical railroad men to deal with, and it is one which I understand Congress has authorized the Interstate Commerce Commission to settle.

The Bureau of Standards has, however, a legitimate interest in all matters of measurement, and of specifications and tests to determine the fulfillment of specifications, since in such matters its facilities are by law to be used not merely for the Government itself, but also for private individuals and corporations. In such a capacity it has been repeatedly consulted by employees of the Interstate Commerce Commission, and has also been called upon to determine both for railroads and for makers of headlights whether certain types of lights fulfill the various State laws to which you refer.

In brief, as a result of such tests, the bureau believes that the rule proposed will not in practice prove as clear and workable and as just as its advocates think, and some familiarity with the few practical tests which have been made in States having similar laws confirms this belief. Furthermore, the bureau believes that, in justice to makers of headlights as well as to railroads, any requirement adopted should be in such form that they can tell with certainty whether or not a given headlight fulfills the requirement. It believes that in the case of the proposed rule this is not so. The bureau realizes that the responsibility for the formulation and enforcement of the regulation rests upon the Interstate Commerce Commission, and it would not intentionally embarrass the commission in carrying out the duty nor hinder the adoption of whatever kind and size of light competent judges might deem desirable, but it believes that it can be of service in assisting to put regulations in such form that their fulfillment or nonfulfillment can be determined with a fair degree of certainty and that decisions under them shall not rest on arbitrary judgments.

With respect to this particular hearing I have stated that Mr. Crittenden's appearance was due to a misunderstanding. Representatives of the Interstate Commerce Commission and later of the railroads had been at the bureau of Standards to discuss the matter of headlight regulations. Believing that both the railroads and the commission desired the assistance of the bureau in arriving at a just decision, the bureau officials suggested the advisability of holding a conference of proper representatives of the commission, the railroads, and the labor organizations and trying to agree on a form of rule which would be clear and definite. If such a conference were held the director of the bureau authorized the attention of any member of the staff who could be of assistance in discussing the form of the rule without expressing any opinions as to the substance of the requirement. When a request was made for Mr. Crittenden's attendance at the formal hearing, his immediate superior directed him to go, not fully realizing the distinction between such a hearing and the conference which had been suggested.

I recognize that the circumstances were such as to give some ground for the suspicion that the Bureau of Standards was inclined to serve the purposes of the railroads in this controversy, and I, as well as the officials of the bureau, regret that any of its employees should have been placed in such a false position. The fundamental purpose of this bureau is to promote fair dealing, and in accordance with this principle I believe the bureau tries to reach an unbiased decision in all matters which come before it, and to use its influence in behalf of substantial justice. In the particular case at issue the bureau believes, as I have stated, that there is reasonable ground for objecting to the form of the rule, and until more evidence is at hand to show the satisfactory operation of such a rule it feels compelled to advise a different method of specifying the light required. At the same time it most certainly does not wish its opinion on this subject to becloud the issue of the right of the Government to enforce the adoption of every possible precaution for the safety of workers and travelers nor to oppose any action which the Interstate Commerce Commission may take in the pursuit of its legal duties. On the contrary, it desires to give every possible assistance to the commission and it therefore regrets the circumstances under which Mr. Crittenden's testimony was brought out, although, so far as can be judged from the information at hand, that testimony properly represents the bureau's opinion of the particular rule in question.

Respectfully,

William C. Redfield,
Secretary.

November 6, 1915.

Hon. William C. Redfield,
Secretary of Commerce, Washington, D. C.

Dear Sir: I beg to acknowledge the receipt of your esteemed favor of October 23 regarding the testimony given by Mr. E. C. Crittenden, an employee of the Bureau of Standards, on behalf of certain railroad companies which were opposing a locomotive headlight regulation recommended by the Division of Locomotive Boiler Inspection and which was being supported by the railroad employees in the interest of safety, and, I regret to say, that we are deeply disappointed that the action and position taken by Mr. Crittenden and his superior officer were not disavowed, but, on the contrary, seem to have received approval, and that the bureau will evidently be permitted to continue to use its influence against the rule proposed by another department of the Government. We are, however, pleased to know that the bureau at least regrets the circumstances under which Mr. Crittenden's testimony was brought out.

I note the following in your letter:

"Believing that both the railroads and the commission desired the assistance of the bureau in arriving at a just decision, the bureau officials suggested the advisability of holding a conference of proper representatives of the commission, the railroads, and the labor organizations and trying to agree on a form of rule which would be clear and definite."

This is the first information we have received that the bureau officials had seen fit to undertake to initiate such a conference, and although we did not understand that the law contemplated that the Bureau of Standards would be a moving party in formulating the locomotive-inspection rules, I am sure that the employees would, on account of their sincere desire to arrive as a "just decision," gladly have availed themselves of the opportunity to participate had such a conference materialized. As it was, however, we gather from Mr. Crittenden's testimony at the hearing and your letter, that the chief inspector of locomotives, after consulting with officials of the bureau, had secured all the information from that source which he deemed of benefit in assisting him to perform the duties imposed upon him by the law. It is evident, however, that certain railroad companies and bureau officials were not pleased with the rule which his division put forth.

As contemplated by the locomotive inspection law, and in accordance with precedent, conferences were held under the direction of the commission between the chief inspector, representatives of the railroad companies, and representatives of the railroad employees, at which the proposed rule was especially considered. Had either party at that time, or the commission, thought that the Bureau of Standards had any further interest in the matter, we presume a request would have been made upon the bureau to give to the conference the benefit of its opinion. As this was not done, and the bureau at that time did not volunteer its assistance, you may more fully appreciate our surprise at the intrusion of Mr. Crittenden at the hearing, after the division of the commission had reached a decision and made a recommendation.

It is entirely foreign to my purpose to create the impression that we wish to in any way interfere with the legitimate activities of the Bureau of Standards or to deny to the officials or employees thereof the right to entertain any opinion whatsoever on any subject. We believe, however, that we are justified in raising an objection when they interfere as in this instance at the request of the railroad companies and undertake to give expert opinion, when they admit that they are wholly uninformed as to the extent or limitations of the law under which the rule to which they object is justified.

We may also be justified in pointing out that Congress had before it, when the locomotive inspection law was passed, a specific headlight provision which authorized the Bureau of Standards to lend its assistance to the Interstate Commerce Commission in conducting tests. When the general act was passed without any reference to the Bureau of Standards, we assumed the Congress was of the opinion that the Interstate Commerce Commission could formulate a proper headlight rule without such assistance.

For your convenience, I inclose herewith copies of the locomotive boiler inspection law and rules and the recent act extending same to include the entire locomotive and tender and also the rules under the extending act which have now been approved by the commission. As you know, Congress contemplated that these laws should be administered by persons who had had practical locomotive experience, through the Division of Locomotive Boiler Inspection under the Interstate Commerce Commission. The interest of the Bureau of Standards seems to be, in common with that of certain companies, to secure the adoption of a headlight rule that will in effect require that all alleged violations be passed upon by that bureau, and thus take the ultimate enforcement of the law out of the hands of the commission and make of each case a contest between experts in the science of photometry. You will be interested in knowing that during the operation of the boiler inspection law it has not been necessary in a single instance to resort to court proceedings to secure a compliance therewith. The policy of the law is established, and its enforcement has resulted in a remarkable saving in life and limb and improvement in operating conditions, and the 350,000 employees, who I believe are most vitally interested in the continued success of the law, will resent what appears to be the purpose of the Bureau of Standards to persist in assisting certain railroad companies in attempting to break down this beneficient law in an important particular.

The purpose of the carriers is confessed in their brief on the headlight question which has just been filed with the commission, from which I beg to quote:

"For obvious reasons it is necessary to have a rule under which a dispute could be submitted to an impartial person or body, such as the United States Bureau of Standards, or a court, for them to determine accurately the exact efficiency of a given headlight."

Unlike the carriers, the employees are content to rely upon the impartiality of the Interstate Commerce Commission, acting under the authority of the boiler-inspection law, in passing upon disputed cases that may be appealed. While not questioning the ability of the Bureau of Standards or the courts to determine the efficiency of a headlight, the employees entertain the expectation that it will not be necessary in the enforcement of the new law to refer any matters to outside parties. We will be gratified if in the enforcement of the act it does not become necessary to take any case into court. The formula put forth by the railroads, and supported by Mr. Crittenden, we believe, would invite champerty. The employees desire to secure safe and proper operating conditions without prosecuting carriers in the courts.

I sincerely trust that upon further consideration, and after you have examined Mr. Crittenden's full testimony at the hearing, especially that portion given on cross-examination, you will deem it necessary in the interest of justice and fair play to the railroad employees and the traveling public to disavow, on behalf of the Department of Commerce, not only the circumstances under which Mr. Crittenden's testimony was brought out, but also the action of the bureau in approving his position and the apparent disposition to take further steps to obstruct and hinder another department of the Government and the railroad employees in the effort to secure proper safety regulations covering locomotive headlights.

Yours, respectfully,

H. E. Wills,
A. G. C. E. and National Legislative Representative.

DEPARTMENT OF COMMERCE,
OFFICE OF THE SECRETARY,
Washington, November 15, 1915.

Mr. H. E. WILLS,
National Legislative Representative,
Brotherhood of Locomotive Engineers,
101 B Street SE., Washington, D. C.

DEAR SIR: With reference to your letter of November 6 regarding certain testimony given at a hearing on the subject of a locomotive headlight regulation apparently proposed by the organization which you represent, and recommended by the Division of Locomotive Boiler Inspection for adoption by the Interstate Commerce Commission, I would say that this department sees no reason for changing its position as stated in our letter of October 23. In view of the statements in your letter regarding interests and intentions which you impute to this department and to the Bureau of Standards in particular, it may be well to repeat some of the facts stated in our former letter.

Neither this department nor the Bureau of Standards has the intention or the disposition to obstruct any department of the Government in carrying out the duties laid upon it by law. In the furtherance of regulations leading to greater safety in all industries this department has a particular interest, and the Bureau of Standards is in fact actively engaged in promoting the adoption of such regulations. In carrying on this work, however, it acts purely in an advisory capacity, often as an intermediary between conflicting interests, and has occasion to participate in many conferences and hearings. In cases of controversy the general policy of the bureau is not to participate in any conference or hearing unless such participation is desired by all parties concerned.

In the case to which you refer information had been requested from the bureau by several interested parties. The officials who dealt with the matter assumed that the purpose of the hearing was to allow the presentation of information and of opinions from such persons as might be called upon by any party concerned, and that the Interstate Commerce Commission desired to have such information and opinions for consideration in making the decision which according to law it was the duty of the commission to make. I have received no intimation that this understanding was not correct.

With the apparent intention of some railroads to contest the authority of the Interstate Commerce Commission to make and enforce such regulations this department has no sympathy, and you are not justified in assuming that the Bureau of Standards desires or intends to assist the railroads in such a contest simply because the experience of that bureau leads it to differ from you with respect to the proper form of the regulation. If the Interstate Commerce Commission has made its decision, that question may be considered as closed so far as any official action is concerned. If you are personally interested in the matter of headlight tests I am sure the officials of the Bureau of Standards would be pleased to discuss the matter with you.

With regard to the other question you raise, namely, the relations under the law of the Bureau of Standards to the Interstate Commerce Commission, I shall be pleased to discuss the question with you if you are authorized to speak for the Interstate Commerce Commission. Otherwise I do not see that the matter can properly be a subject for discussion between us.

Respectfully,

WILLIAM C. REDFIELD, *Secretary.*

Mr. Atterbury referred to the law which he said was in force in the brotherhoods by which men are expelled for going before legislative bodies and opposing bills that the majority of the members had voted to support, and he exhibited great solicitude for the poor, downtrodden members of the organization who are restricted in their liberties by the domination of their so-called leaders. I apprehend that his principal objection is that the Pennsylvania does not control the organization, and I suppose he had in mind the case of Mr. Heller, who appeared for the railroads before the Interstate Commerce Commission and related what he said were experiences with the high-power headlight on the Big Four. Mr. Heller has since been expelled by his division, I am informed, not because he testified that he was opposed to the electric headlight, but for falsifying. He was

a member of the Brotherhood of Locomotive Engineers. He stated before the commission that he had been running an engine on a night run, and that in this service he had had trouble with the electric headlight. The facts were that he had not been on a night run for a number of years, and when his testimony was brought to the attention of his division the men, his associates, looked up his record and expelled him for giving false testimony. He was merely an unfortunate victim who, his associates had reason to believe, was holding a position, not because of his efficiency, but on account of his loyalty to the officials of the company in responding to their calls in such instances.

The men on the Pennsylvania Railroad hold their jobs under the general manager, who was speaking to you the other day, and he, with other officials of that road, are opposed to the electric or high-power headlight. I am an officer of the organization to which he referred and I am holding my position, not because of my obedience to the railroad officials, but because of my loyalty to the will of the organization that is composed exclusively of locomotive engineers and that is controlled by them. And in advocating the high-power headlight I am acting in accordance with the light that I have gained by long years of experience—36 years on a locomotive as an engineer—and under the instructions of the locomotive engineers of this country, as expressed by their delegates in their conventions.

STATEMENT OF MR. W. M. CLARK, VICE PRESIDENT AND NATIONAL LEGISLATIVE REPRESENTATIVE, ORDER OF RAILWAY CONDUCTORS.

Mr. CLARK. Mr. Chairman, I have a short statement here that I would like to read if I may have the time. I think I can read it in about 12 or 15 minutes, provided I am not interrupted during the reading of the statement. Then, if you see fit to ask me any questions, I will be very glad to answer them.

Mr. MONTAGUE. Will you tell me what bill you are referring to?

Mr. CLARK. H. R. 9047.

The CHAIRMAN. Is that the clearance bill?

Mr. CLARK. Yes, sir. I am speaking also for Mr. Wills, Mr. McNamara, and Mr. Fitzpatrick, representing train-service organizations.

We appreciate the courtesy of the committee in permitting us to submit a further statement on the clearance bill. Had we not feared that some of the things that were said by the representatives of the railroads might perhaps leave a wrong impression in the minds of the committee, we would have been satisfied to rest the case with our former statements; but in view of what has gone into the record we have felt that in justice to ourselves and the great bodies of men we represent we should make an additional statement.

In our many years of efforts to secure safety legislation we have found it the usual thing for railroad officials who appear in opposition to the bills to raise the calamity cry and make extravagant predictions as to the cost of conforming to the proposed requirements. This was done in the case of the safety appliance acts, the hours of service law, the locomotive safety laws, and, in fact, that has been the fixed practice of the railroads in cases of this kind. At least certain officials of the railroads appear to believe or want to make

others believe that the employees, in advocating safety legislation, desire to bankrupt the roads, when as a matter of fact the laws we have secured have in actual operation been of benefit to the companies, financially and in other ways.

In all of our experience in this line of work, we believe we are safe in saying that there has never been an instance in which the representatives of the railroad corporations have gone to greater extremes in overstatements of cost than they have with respect to the pending clearance bill. There did not seem to be any restraint whatever upon the exaggeration that was indulged in.

The position taken here the other day was that to protect the lives and limbs of the employees from obstructions that encroached upon the limits of safety would cost the enormous sum of $2,000,000,000. We warned the committee in our opening statement to weigh carefully the figures of cost the representatives of the railroads would submit, and to analyze the basis upon which they were made. Our warning that the officials would attempt to apply to the present bill the data gathered by them for the purpose of opposing the La Follette bill has been justified by the developments.

At the outset, we wish to challenge in toto the estimates of cost that have been submitted.

The Chairman. What do you mean by the La Follette bill?

Mr. Clark. Because their statement of the cost of conforming to this bill was based upon the provisions of the La Follette bill.

The Chairman. What La Follette bil?

Mr. Clark. A bill that was introduced four or five years ago in regard to clearance of obstructions.

We believe they are merest guesswork, and were not based upon the conditions as they exist at this time. We are fully convinced from the nature of the statements made by the officials who appeared that a careful examination of the figures and the manner in which they were compiled, will disclose that they are utterly unreliable. On their face, they are excessive and without foundation, and we are surprised the officials would submit them to this committee for serious consideration. The fact that they have seen fit to come into the hearings with statements of the kind indicated, force us to the conclusion that the figures can have no other purpose than to serve to scare the committee and the public and to be used in articles in the press and railway publications in such a manner as to cast reflections upon the organizations and their efforts to secure safety legislation.

The railroad representatives frankly said in submitting the estimates that they were not based upon the provisions of the bill under consideration, but were taken from data said to have been compiled to combat another and a different bill and with respect to clearances as they existed over five years ago.

Furthermore, even these old figures, which we have always believed were themselves excessive, appear to have been doctored in order to make them even more formidable.

Circular No. 11, dated December 13, 1910, sent out by the special committee on relation of railway operation to legislation to the railways relating to the La Follette bill, contains the following:

Replies to circular No. 5 received from 109 operating companies indicate a total approximate cost to comply with the terms of the proposed act of $444,000,000. Of

this, approximately $7,500,000 will be required to bring equipment within the limits, and the balance, about $436,500,000, to remove or enlarge structures, tunnels, etc.

This cost is only approximate, inasmuch as a number of railroads have failed to give an estimate on certain of the items, on the ground that the cost would be so enormous that it would be practically impossible to conform. There are a small number of roads, principally operating through the Southwest, which will not be affected by the proposed legislation.

By some unexplained process of calculation, this "total approximate cost to comply with the terms" of the bill then before Congress, which was placed at that time at $444,000,000, is almost doubled, and made to read $700,000,000 by the distinguished engineers who appeared here the other day. The committee which was responsible for the original estimate of the total cost was careful to explain that the $444,000,000 included the enlargement of tunnels, overhead as well as side, and also the scrapping of large locomotives and cars.

The present committee of officials does not stop with almost doubling the original estimate under the La Follette bill, but would have Congress believe the pending bill would cost the railroads three times as much as their most extravagant guess under the former bill; and this, notwithstanding the present measure excepts overhead tunnels altogether, does not measure the size of equipment, and permits the use of rolling stock of any dimensions whatsoever, and offers unlimited extensions of time as to all existing structures. The figures they submit make no allowance for any of these very material differences in the two bills, which would greatly reduce the estimates of cost to comply with the suggested requirements.

If the bill fixed an arbitrary and unvarying rule that over every foot of railroad throughout the country there must be provided forthwith 3 feet of clearance on either side and 6 feet overhead, perhaps the aggregate cost to comply with its terms would reach some such enormous figure as has been submitted. It is evident, however, that the statements of cost made by the carriers were made upon the assumption that this was the intention of the bill before the committee.

Another feature that does not seem to have been taken into consideration in figuring the cost is the number of obstructions that have been removed since 1910. It is recalled that when the La Follette bill was dropped earnest measures were to be taken by the companies to remove dangerous obstructions along their lines, and the claim is now made that much has been done in removing these obstructions. However, no allowance seems to have been made for these improvements that are supposed to have been accomplished up to this time.

In all fairness to the committee and to the employees who are asking for this legislation as a measure of relief from an unbearable condition, we feel that the estimates that were submitted should have been made with respect to the actual purpose and intent of the bill, as clearly indicated by its terms, and not upon suppositions that are not contemplated by any one favoring it. We do not believe the members of the committee, who are familiar with the proposed bill as it is drawn and who are in a position to examine the testimony that is given, will be deceived by the rash guesswork of the representatives of the railroads, and we venture the hope that when the carriers relate to the press and the public these occurrences, they will hold nearer to the facts than they have done before the committee.

It is not our purpose in asking Congress to give consideration to the question of a proper clearance bill to request the impossible nor the impracticable. We realize fully from our practical experience and knowledge of conditions as they exist in many localities that we can not expect to have a law passed that will bring immediate relief from all of the dangers that now exist on account of improper clearance conditions. We do not hope for the attainment of the ideal, but we do hope that the committee will see the necessity for a law to stop the killing and maiming of hundreds of engine and train men on account of these obstructions that are maintained along the line of track. The hearings upon the pending bill have very forcibly brought to the attention of Congress the dangerous conditions that exist. There is no contention by the representatives of the railroads that it is a safe proposition to operate trains with less than 3 feet of free space on the sides and 6 feet on top, and yet it is confessed—if the figures could be accepted as accurate—that to make the lines safe for the men to work upon the trains it will cost over $2,000,000,000.

It was our thought in drafting the bill that it afforded for the most part as much latitude as conditions reasonably justified. Representatives of the carriers laid considerable stress upon the fact that La Follette bill contained an exemption with respect to tunnels, retaining walls, embankments of natural rock, or permanent overhead structures, the removal of which might be deemed impracticable by the Interstate Commerce Commission, whereas the pending bill provides only for extensions of time. We wish to call attention to what seems to have been overlooked, and this is an important feature: The pending bill gives the commission unlimited power to extend the time of compliance with the law not only with respect to obstructions such as those mentioned, but as to all existing structures of every kind and nature, and it was our thought in connection with this provision that the pending bill was more liberal than the La Follette bill.

The CHAIRMAN. Do you mean that they could make an indefinite extension of the time under this bill?

Mr. CLARK. Yes, sir; either 5 years, 10 years, or 100 years, if they saw fit.

If, however, the committee feels that there would not be a constitutional question involved and the carriers prefer to have an exemption as to existing tunnels, retaining walls, embankments of natural rock, or permanent overhead structures, in the discretion of the commission, leaving the bill mandatory as to all such obstructions as mail cranes, poles, switch stands, water towers, overhead wires, bridges, etc., this modification would no doubt be agreeable to the employees.

The CHAIRMAN. You would want your ideas observed as to all new structures?

Mr. CLARK. I will cover that in just a moment. In that list of things I mentioned, are included the things that kill our men, and we want some relief from obstructions of that kind.

Also with respect to the future structures and reconstruction, where the physical difficulties are such as to make it extremely impracticable if not impossible to meet the clearance dimensions prescribed in the bill, it might be well to give to the commission some discretion.

A further modification that might be made without destroying the effect and purpose of the bill would be to provide for exemptions from the vertical clearance requirements during movements in which trainmen are not permitted in the course of duty to be on top of cars, particularly upon the electrically operated lines.

With your permission, I would like to have the statement I have read made a part of the record.

The CHAIRMAN. Have you gentlemen concluded your statements?

Mr. CLARK. Yes, sir; so far as I am concerned.

The CHAIRMAN. Have all of you finished?

Mr. STERLING. Referring to that list of obstructions you have named, I understand that you would be satisfied with a law that would except——

Mr. CLARK (interposing). That would except existing tunnels, retaining walls, embankments of natural rock, or permanent overhead structures in the discretion of the commission; the Hudson River and North River tunnels, the New York Central depot, which it was suggested might be moved under the terms of the bill.

Mr. STERLING. Would there be a very great expense in connection with those you have named?

Mr. CLARK. Not from my viewpoint.

Mr. STERLING. The section gangs on the railroads could handle a great many things, such as poles, switch stands, etc.?

Mr. CLARK. They have construction gangs, as they are called, or men who are given that kind of work to perform, and they have wrecking crews that go along with the cars. They have construction crews, or whatever you might call them. These are the things that are killing our men, and we ask that we be given some relief from them.

Mr. O'SHAUNESSY. Suppose you run over that list again.

Mr. CLARK. If, however, the committee feels that there would not be a constitutional question involved, and the carriers prefer to have an exemption as to existing tunnels, retaining walls, embankments of natural rock, or permanent overhead structures, in the discretion of the commission, leaving the bill mandatory as to all such obstructions as mail cranes, switch stands, water towers, overhead wires, bridges, etc., this modification would no doubt be agreeable to the employees.

Mr. O'SHAUNESSY. You have made your estimate of the cost?

Mr. CLARK. We are not in a position at this time to say what it would cost.

The CHAIRMAN. It is not claimed that the cost of these things you have mentioned would compare with the cost of the other things?

Mr. CLARK. I presume that if you were to take up these things later on, the railroads would come in here and say to the committee that it would cost at least one billion and a half dollars. There is no doubt about that.

Mr. HAMILTON. You do not estimate that it would cost that sum, do you?

Mr. CLARK. No, sir; not in any sense.

Mr. HAMILTON. I did not know but what you had some sort of rough estimate in your own mind.

Mr. CLARK. We have not been able to arrive at what the cost of complying with the conditions submitted in that paragraph would

be, and I do not know that we could accurately arrive at the cost of doing those things.

Mr. HAMILTON. As to the permanent obstructions, as I understand it, you are saying that they could be excepted from the operations of the bill. Did you say that, or did you say that they could be changed in the discretion of the Interstate Commerce Commission in the course of time?

Mr. CLARK. I said that if the committee feels that there would not be a constitutional question involved and the carriers prefer to have an exemption as to existing tunnels, retaining walls, embankments of natural rock, or permanent overhead structures, in the discretion of the commission, leaving the bill mandatory as to all such obstructions as mill cranes, poles, switchstands, water towers, overhead wires, bridges, etc., this modification would no doubt be agreeable to the employees.

Mr. HAMILTON. Do you exempt them from the operations of the bill?

Mr. CLARK. Yes, sir; if they prefer.

The CHAIRMAN. We have a good deal of business in the House to-day, and we will have to wind this hearing up. Do any of you wish to be heard to-morrow?

Mr. CLARK. I have finished, so far as I am concerned, unless some of my colleagues desire further time. I wish to thank the committee for its attention.

ADDITIONAL STATEMENT OF HON. CHARLES J. FAULKNER, ATTORNEY AT LAW, WASHINGTON, D. C.

Mr. FAULKNER. Mr. Chairman, I feel that we have no right to discuss further this question. Whatever view the committee may take of it, it appears to me that the argument submitted by my friend shows the wisdom of our previous discussion of it. There is one matter, however, on which it is important that the committee should be informed, and to that end I desire an opportunity to call the attention of the committee to it.

The CHAIRMAN. If it will not take longer than five minutes——

Mr. FAULKNER (interposing). I will not take two minutes. I simply desire to submit to the committee the decision of the United States Circuit Court of Appeals for the Ninth Circuit, dated February 14, 1916, and also to call your attention to the case of Virginian Railway Co. *v.* The United States, decided by the United States Circuit Court for the Fourth Circuit and found in the Two hundred and twenty-third Federal Reporter, page 748.

These two cases are the only ones in which a decision of the higher courts has been made on this subject, in both of which cases they decided that it was unlawful, under the safety-appliance laws that you have already enacted, for the railroad company to permit its employees or trainmen to go on top of the cars for the purpose of using the brakes. In both cases they sustained the proceedings, imposing penalties, as provided for in the safety-appliance act, on the carrier for permitting trainmen to go on top of the cars for the purpose of using hand brakes, the courts holding that under the act of Congress it was unlawful to permit the use of hand brakes, as it required the entire train to be controlled by air brakes.

The CHAIRMAN. You think that because it is unlawful to require a man to ride on top of the train, if he is knocked down and killed by one of your bridges, the company ought to be relieved of liability?

Mr. FAULKNER. No, sir. I say this, that these decisions avoid the necessity of providing for free overhead clearance provided for in this bill, as the railroad company can not permit its employees to go on top of the train for this purpose without being guilty of a violation of the law. The arguments by those favoring this measure before the committee was that that was the main cause for overhead accidents, and that consequently a clearance of 6 feet should be provided. Since the courts have passed upon the existing law and have decided that it is unlawful to permit the trainmen to go on top of the cars the railroads are prohibited from requiring it under the law and the penalties prescribed by the statute.

Mr. STERLING. Are you going to put that decision in the record?

Mr. FAULKNER. I think it had better go into the record. One is the case of the Virginian Railway Co. *v.* the United States, 233 Federal Reporter, page 748, and the other is the case of the United States *v.* the Great Northern Railway Co., decided by the United States Circuit Court of Appeals for the Ninth Circuit, on February 14, 1916.

(The decision referred to is as follows:)

DECISIONS UNDER THE SAFETY APPLIANCE ACTS.

United States Circuit Court of Appeals, Ninth District, No. 2636. United States of America, plaintiff in error, *v.* Great Northern Railway Company, defendant in error. Error to the District Court of the United States for the Eastern District of Washington. Decided February 14, 1916.

1. It was the intention of Congress by the power-brake provision of the safety-appliance acts (27 Stat., 531; 29 Stat., 85; 32 Stat., 943) to make it unlawful to require brakemen to use hand brakes in the ordinary management and movement of freight trains in interstate commerce. (*Virginia Ry. Co.* v. *United States*, 223 Fed., 748 quoted with approval).
2. In an act, the express purpose of which is to relieve brakemen from the danger of using hand brakes, a provision that the train shall be so equipped as to run without requiring the use of the hand brakes is a prohibition against the use of the hand brakes in the ordinary movement of trains.
3. The language of the act was equivalent to declaring that after the date named freight trains should not only be equipped to run, but should actually be run without requiring brakemen to use the common hand brake.

Francis A. Garrecht, United States attorney, and Philip J. Doherty, special assistant United States attorney, for plaintiff in error.

Charles S. Albert and Thomas Balmer, for the defendant in error.

Before Gilbert, Ross, and Morrow, circuit judges.

OPINION OF THE COURT.

GILBERT, *Circuit Judge:*

An action consisting of 12 counts was brought against the defendant in error to recover penalties for violations of the safety-appliance act approved March 2, 1893 (27 Stat., 531), as amended by the act of April 1, 1896 (29 Stat., 85), and by the act of March 2, 1903 (32 Stat., 943). It was alleged that the defendant ran on its line of railroad in interstate commerce certain freight trains drawn by its own locomotive engines, but that at times the speed of the trains was controlled by brakemen who were required to use common hand brakes for that purpose. There was a stipulation between the parties that each engine was equipped with a power driving-wheel brake, and appliances for operating a train-brake system; that in each train not less than 85 per cent of the cars therein were equipped with power or train brakes which were used and operated by the engineer of the locomotive drawing such train, to control its speed, in connection with the hand brakes. The court below sustained a demurrer to the

complaint on the ground that none of the counts therein set forth facts sufficient to constitute an offense against the United States.

The statute of March 2, 1893, provides—

"That from and after the 1st day of January, 1898, it shall be unlawful for any common carrier engaged in interstate commerce by railroad to use on its line any locomotive engine in moving interstate traffic not equipped with a power-driving wheel brake and appliances for operating the train-brake system, or to run any train in such traffic after said date that has not a sufficient number of cars in it so equipped with power or train brakes that the engineer on the locomotive drawing such train can control its speed withour requiring brakemen to use the common hand brake for that purpose."

The amendment of April 1, 1896, imposes a penalty upon any such common carrier—"using any locomotive engine running any train, or hauling or permitting to be hauled or used on its line any car in violation of any of the provisions of this act."

The amendment of March 2, 1903, provides—

"That whenever, as provided in said act, any train is operated with power or train brakes, not less than 50 per cent of the cars in such train shall have their brakes used and operated by the engineer of the locomotive drawing such train; and all power-braked cars in such train which are associated together with said 50 per cent shall have their brakes so used and operated."

The act gave the Interstate Commerce Commission authority from time to time to increase the minimum percentage of cars in any train required to be operated with power or train brakes, and at the time of the acts complained of the percentage of cars required to have their brakes used and operated by the engineer of the locomotive drawing the train had been increased to 85.

The court below construed the acts and amendments thereto as permitting the use of hand brakes in connection with the specific power brakes referred to in the act. The plaintiff assigns error to that construction and contends that it was the intention of the act to require that the movement of all such trains must be controlled by power brakes, and that no brakemen should be required to use hand brakes.

We have carefully considered the questions involved and have reached these conclusions:

First. Aside from the language of the act and the amendments, there is external evidence that it was the intention of Congress thereby to make it unlawful to require brakemen to use hand brakes in the ordinary management and movement of freight trains in interstate commerce. This is shown by the title of the act and the reports of committees during the passage of the bill through Congress. The title of the act is "An act to promote the safety of employees and travelers on railroads by compelling common carriers engaged in interstate commerce to equip their cars with automatic couplers and continuous brakes, and their locomotives with driving-wheel brakes, and for other purposes." The House Committee on Interstate Commerce, in its report on the bill, after referring to the number of train hands killed in falling from trains and engines, said:

"It is the judgment of this committee that all cars and locomotives should be equipped with automatic couplers, obviating the necessity of men going between the cars, and continuous train brakes that can be operated from the locomotive, and dispense with the use of men on the tops of the cars; that the locomotive should be provided with power driving-wheel brakes, rendering them easy of control. The brakes now have to be largely operated by the brakemen, traveling over the tops of the cars by night and day, through sleet and rain, exposed to great danger of falling from the cars, or from overhead obstructions."

The chairman of the committee, which had charge of the bill in the Senate, explained the bill by saying—

"When we get the cars of this country equipped with uniform couplers, with air brakes, so that the men will not be required to go between the cars, so that the men who are on top of the cars to-day will be taken off and thereby relieved from the danger of such positions, there will be no cause for any further legislation on the subject, in my judgment."

The Interstate Commerce Commission also so understood the act. In its eleventh annual report, it said:

"The requirement, therefore, is not that a carrier shall equip its cars with the brake or the coupler, but that it shall not use in interstate traffic a train which is not controlled by the train brake."

In its thirteenth annual report the commission, anticipating the time when the law should go into effect, said:

"The men will not then be obliged to use the tops of the cars for braking, nor to walk on the running boards. The freight train will be as completely under the control of the engineer as passenger trains are at the present time."

Second. The act by its terms expresses with sufficient certainty the intention of Congress that hand brakes shall not be used on freight trains in the ordinary movement of such trains in interstate commerce. By the act Congress adopted for freight trains the system of braking that was in use on passenger trains. It made no specific mention of the number of cars in a train that should be equipped with power brakes, but it enacted in general terms that the train should be sufficiently equipped to be run without requiring the use of the common hand brake. The clause "without requiring brakemen to use the common hand brake," as found in the first section of the act is used in the same sense as the words "without the necessity of men going between the ends of the cars," in the second section, which provides for automatic couplers. The language of the act was equivalent to declaring that after the date named freight trains should not only be equipped to run, but should actually be run without requiring brakemen to use the common hand brake. No implication to the contrary is to be found in the provision is section 2 [of the act of April 14, 1910] that all cars must be equipped with "efficient hand brakes," a provision which is ascribable to the necessity of controlling the movement of cars in yards and elsewhere, when trains have been broken up or are being made up. In an act, the express purpose of which is to relieve brakemen from the danger of using hand brakes, a provision that the train shall be so equipped as to run without requiring the use of hand brakes is a prohibition against the use of hand brakes in the ordinary movement of the trains. In view of the protection which was intended to be afforded by the act, it would have been idle for Congress to declare that freight trains must be equipped with appliances to operate a power-brake system, and at the same time leave it optional with a railroad company to decide whether it would or would not operate its trains with that system. To say that trains shall be provided with power brakes, and in the same breath to say that the carrier may refuse to use them, is to contradict the very purpose and terms of the act. Yet such is the effect of the law if it be given the construction contended for by the defendant in error.

The act is not to be construed by the rules which govern the construction of criminal statutes. The action is a civil action to recover a penalty. The Supreme Court has held that if the language of a penal statute is plain, it will be construed as it reads, and that the words will be given their full meaning, and if ambiguous the court will lean more strongly in favor of the defendant than it would be if the statute were remedial in its nature. Bolles *v.* Outing Co. (175 U. S., 262); Johnson *v.* Southern Pacific Co. (196 U. S., 1). In the case last cited, the court quoted with approval the language of Mr. Justice Story in United States *v.* Winn (3 Summ., 209), as follows:

"I agree to that rule in its true and sober sense; that is, that penal statutes are not to be enlarged by implication or extended to cases not obviously within their words and purport. * * * And where a word is used in the statute which has various known significations, I know of no rule that requires the court to adopt one in preference to another, simply because it is more restrained, if the objects of the statute equally apply to the largest and broadest sense of the word. In short, it appears to me that the proper course in all these cases is to search out and follow the true intent of the legislature, and to adopt that sense of the words which harmonizes best with the context, and promotes in the fullest manner the apparent policy and objects of the legislature."

The only reported case which supports the decision of the court below is United States *v.* Baltimore & O. R. Co. (176 Fed. 114), in which it was held that the law is complied with so long as it is shown that trains contain the required percentage of cars equipped with power brakes. The order of nonsuit in that case was affirmed by the Circuit Court of Appeals for the Third Circuit in United States *v.* Baltimore & O. R. Co. (185 Fed. 486), but that court declined to express an opinion as to the construction placed on the statutes by the District Court. On the other hand, in Virginian Ry. Co. *v.* United States (223 Fed. 748), the Circuit Court of Appeals for the Fourth Circuit, in a carefully considered opinion, reached the opposite conclusion. The court said:

"It is impossible to believe that Congress compelled the equipment of locomotives and cars with the appliances specified in the act for the declared purpose of doing away with the dangerous operation of hand brakes, and then left it to the carriers themselves to decide when and under what circumstances those appliances should be used."

The judgment is reversed, and the cause is remanded to the court below for further proceedings:

Ross, *Circuit Judge*, dissenting:

The sufficiency of the complaint in this case is to be considered in the light of this stipulation entered into by and between the respective parties:

"It is stipulated that in consideration of the demurrer to each of the causes of action herein in this court or in any appellate proceedings, it may be accepted as a fact as to

each of said causes of action that each engine was equipped with a power driving-wheel brake and appliances for operating a train-brake system, and that in each train not less than 85 per cent of the cars therein were equipped with power or train brakes, which were used and operated by the engineer of the locomotive drawing such train, to control its speed in connection with the hand brakes.

"Dated this 14th day of June, 1915.

"(Signed) "FRANCIS A. GARRECHT,
"M. C. LIST,
"*Attorneys for Plaintiff.*
"CHAS. S. ALBERT,
"*Attorney for Defendant.*"

The facts of the case, therefore, are that as to each of the causes of action counted on each engine was not only equipped with a power driving-wheel brake and appliances for operating a train-brake system, and that in each train not less than 85 per cent of the cars therein were equipped with power brakes, but that they were used and operated by the engineer of the locomotive drawing such train to control its speed in connection with the hand brakes.

The sole question, therefore, in the case, is not whether Congress should have under such circumstances prohibited the use of any hand brakes, but whether it has done so by its legislation upon the subject.

That it has not done so seems to me very plain from a mere reading of its enactments. That of March 2, 1893, referred to in the opinion of the court, declares:

"That from and after the 1st day of January, 1898, it shall be unlawful for any common carrier engaged in interstate commerce by railroad to use on its line any locomotive engine in moving interstate traffic not equipped with a power driving-wheel brake and appliances for operating the train-brake system or to run any train in such traffic after said date that has not a sufficient number of cars in it so equipped with power or train brakes that the engineer on the locomotive drawing such train can control its speed without requiring brakemen to use the common hand brakes for that purpose."

It will be observed that in that act Congress did not specify the number of cars that should be equipped with the train-brake system, only requiring that the number should be "sufficient" for the purpose designed. But by its amendment of March 2, 1903, also referred to in the opinion, Congress declared:

"That whenever, as provided in said act, any train is operated with power or train brakes, not less than 50 per cent of the cars in such train shall have their brakes used and operated by the engineer of the locomotive drawing such train; and all power-brake cars in such train which are associated together with said 50 per cent shall have their brakes so used and operated; and, to more fully carry into effect the object of said act, the Interstate Commerce Commission may, from time to time, after full hearing, increase the minimum percentage of cars in any train required to be operated with power or train brakes which must have their brakes used and operated as aforesaid; and failure to comply with any such requirement of the said Interstate Commerce Commission, shall be subject to the like penalty as failure to comply with any requirement of this section."

Pursuant to the power thus delegated to it, the Interstate Commerce Commission, on the 6th day of June, 1910, promulgated this order:

"That it is ordered, that on and after September 1, 1910, on all railroads used in interstate commerce, whenever, as required by the safety-appliance acts as amended March 2, 1903, any train is operated with power or train brakes, not less than 85 per cent of the cars of such train shall have their brakes used and operated by the engineer of the locomotive drawing such train, and all power-brake cars in each such train which are associated together with the 85 per cent shall have their brakes so used and operated."

It is thus seen that at first Congress only required a "sufficient" number of the cars of a train to be equipped with the power-brake system, without specifying the number, then by amendment fixed that number at not less than 50 per cent and gave to the Interstate Commerce Commission power to increase that number after a full hearing before it to the extent it should deem wise. There is in no act of Congress that has been cited any provision prohibiting the equipment of the cars with hand brakes also; on the contrary, by section 2 of its act of April 14, 1910 (36 Stat. L., 298), Congress expressly provided, among other things, that "all cars must be equipped with secure sill steps and efficient hand brakes," with a certain proviso not important to be here mentioned.

There is certainly nothing in the above quoted provisions of the statute either expressly or, in my opinion, by implication prohibiting the use of hand brakes in connection with the power brake system, and the facts of the present case as made to

appear by the record are that the full percentage of the cars constituting the trains in question, required by the Interstate Commerce Commission pursuant to its legislative authority to be equipped with the power brake system, were so equipped, and that the trains in question were operated thereby. For the court to hold that a larger percentage of the cars of the trains should have been equipped with and operated by the power brake system, would be for it to assume the function devolved by Congress upon the Interstate Commerce Commission, which, of course, it has no power to do.

The case of Virginian Ry. Co. *v.* U. S. (233 Fed., 748), quoted in the opinion as sustaining the conclusion of the court, does not, I think, in any respect do so. The trains there under consideration consisted of 100 cars each, each of which was equipped with power brakes and also with hand brakes, and the driving wheels of the engines were also properly equipped; nevertheless, upon each of those trains the power brakes were not used at all, but, on the contrary, the trains were controlled solely by the use of the hand brakes, which the court very properly held was a clear violation of the act of Congress.

In my opinion, the judgment of the court below should be affirmed.

The CHAIRMAN. If everybody is through, the committee will have an understanding. We will meet to-morrow morning at 10 o'clock and try to make up a verdict on these safety appliance bills, and after the committee makes up its verdict, we do not want anybody to come in and say that he wants a hearing on these new bills.

(Thereupon, at 12 o'clock, noon, the committee adjourned.)

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
HOUSE OF REPRESENTATIVES,
Friday, May 5, 1916.

The committee met at 10 o'clock a. m., Hon. William C. Adamson (chairman) presiding.

STATEMENT OF MR. HORACE F. CLARK, ATTORNEY AT LAW, METROPOLITAN BANK BUILDING, WASHINGTON, D. C.

The CHAIRMAN. What is it you want to present, Mr. Clark?

Mr. CLARK. Mr. Chairman, I appear at the request of Mr. Arthur W. Brady, whom you probably know.

The CHAIRMAN. What bill do you want to talk about?

Mr. CLARK. Safety on railroads.

The CHAIRMAN. Is that the Sims or the Stevens bill?

Mr. CLARK. Yes, sir.

The CHAIRMAN. I understand that has been abandoned.

Mr. CLARK. Just a moment, please. There have been a number of bills introduced at this session of Congress which are very similar to bills which were introduced in the last Congress.

The CHAIRMAN. We have been considering four safety-appliance bills. Now, is it one of them you want to talk about?

Mr. CLARK. I do not want to argue any proposition this morning. I simply want to call your attention to the fact that two years ago we appeared before this committee, or a subcommittee of this committee, of which Mr. Esch was a member, and we argued all of these bills. We claimed at that time that there was no distinction made in the several bills as between the steam railroads and the electric railroads.

The CHAIRMAN. Have you read what we call the clearance bill?

Mr. CLARK. Yes.

The CHAIRMAN. Does that apply to electric railroads?

Mr. CLARK. They all apply. On their face they make no distinction between electric railways and steam railways.

The CHAIRMAN. And you want to exempt electric railways from the operation of that bill?

Mr. CLARK. Yes, sir. After our argument two years ago on all of these bills, Mr. Stevens, who was then the chairman of the subcommittee, prepared what was called the omnibus bill, and as a result of our hearings he had that bill amended.

The CHAIRMAN. That is the omnibus bill which Mr. Stevens's subcommittee reported?

Mr. CLARK. Yes.

The CHAIRMAN. You need not talk about that. The committee will not act on that bill.

Mr. CLARK. He had that bill amended so as to provide that none of the provisions of the bill should apply to electric railways, and that is all we want. If this committee will do that——

The CHAIRMAN (interposing). That bill is not going to be considered, as I understand it. The question is, do you want to make the distinction as to the clearance bill which they are insisting upon?

Mr. CLARK. I want to make the distinction as to every bill introduced in this Congress.

The CHAIRMAN. We are not talking about anything but the clearance bill now.

Mr. CLARK. What I want is to call the attention of the committee to the fact that we want every bill that has no provision in it for the exclusion of the electric railways so amended.

The CHAIRMAN. Will you let me ask you about the clearance bill?

Mr. CLARK. What is the number of that bill?

Mr. PARKER of New York. H. R. 9047.

The CHAIRMAN. I want to know if the provisions of the clearance bill——

Mr. CLARK (interposing). That makes no provision for electric railways, either.

The CHAIRMAN. I would like to know if the provisions of that bill would really affect electric railroads at all. Do they have the same side obstructions and overhead obstructions?

Mr. CLARK. Yes, sir. Mr. Brady informs me that these bills all affect the electric railways, and all we want is for you gentlemen to take notice of the fact that there is a distinction, as the committee did at the last Congress between the electric and the steam railroads, and put in similar amendments; that is all we ask.

The CHAIRMAN. If the same trouble exists, why should they be excepted?

Mr. CLARK. Because there are a number of conditions that are applicable to the electric railways that are not applicable to the other.

The CHAIRMAN. You had better satisfy this committee about that.

Mr. CLARK. All I need to say to you this morning is to call your your attention to this hearing.

The CHAIRMAN. I do not know whether they will ever read that or not. You had better tell them about it while you are here. Tell us what the difference is. If there is any reason why you should be allowed to maintain the same obstructions that steam railroads are not allowed to maintain, tell the committee about it.

Mr. CLARK. I would prefer that the chairman of the committee tell about that.

The CHAIRMAN. The chairman of what committee?

Mr. CLARK. Mr. Brady. He has written you several letters.

The CHAIRMAN. Where is he?

Mr. CLARK. Mr. Brady is at Anderson, Ind.

Mr. STERLING. Men do not ride on top of electric cars and do not hang on the side of the cars, do they?

Mr. CLARK. No, sir; that is true.

Mr. ESCH. And as a rule there is only one car in a train or sometimes two.

Mr. CLARK. Yes; but on the face of it, if the bill makes no distinction, we are brought within its terms.

Mr. ESCH. I confess that the argument you made was a very strong one, and as a result of that presentation we made the change suggested.

Mr. PARKER of New Jersey. Is there not danger of men being caught between the cars when they run too close together? I remember the case of a great football player who got off of a car and was caught between that car and another one and was killed.

Mr. CLARK. Yes; when I was a boy I used to jump on and off of trains going out of here.

Mr. PARKER of New Jersey. But I am talking about electric railroads within the last eight years.

Mr. CLARK. Those accidents might happen. We are all liable to have accidents of that kind any time. If a man is foolish we can not provide against that; but the roads are entirely different. Gentlemen of the committee, there are very few of our roads that have more than a few miles of line across State lines.

The CHAIRMAN. You know, Mr. Clark, that hearing was before a subcommittee, and Mr. Esch was a member of it, but the balance of us were not, and while you are here, if you can tell the balance of us——

Mr. CLARK (interposing). The whole business is set out in Part VI of your hearings and I simply want to ask that they be printed as a part of your proceedings.

The CHAIRMAN. Just identify that and give it to the stenographer and let him print it as a part of your statement.

Mr. RAYBURN. Can you not state just in a few words what the differences are between the two railroads?

Mr. CLARK. As I said, in the first place, while most of the roads are under the Interstate Commerce Commission, they only run a few miles across the State line, and the conditions as to electric railroads are entirely different.

Mr. SIMS. Do you have any tunnels?

Mr. CLARK. Oh, no.

Mr. SIMS. And no overhead travel?

Mr. CLARK. No, indeed.

The CHAIRMAN. We know the conditions are different, but we want to know wherein the differences exist.

Mr. CLARK. Judge, is it not sufficient for me to put this document in the record?

The CHAIRMAN. Some of us might read that some time, but you are here now and can tell us.

Mr. CLARK. I am not authorized to do that. I feel embarrassed because the chairman of the committee is the one to appear before you.

The CHAIRMAN. He is not here and you are.

Mr. CLARK. He can appear here in a couple of days if you will let him do so. All he has requested me to do is to submit this document. I will be perfectly willing to go on——

The CHAIRMAN (interposing). You are not here as an officer of the road?

Mr. CLARK. No; I am simply here at the request of Mr. Brady.

The CHAIRMAN. If you know anything about it, you can tell us about it, because you are a witness here.

Mr. CLARK. I simply know what was said then.

Mr. CAREW. Mr. Chairman, I am afraid you are embarrassing the gentleman.

The CHAIRMAN. Not at all.

Mr. CLARK. I did not come here to make an argument. I stated that at the outset. I am not authorized to make an argument. I feel that the American Electric Railway Association would feel incensed at me if I made an argument without their direction.

The CHAIRMAN. I do not think that is a consideration for us.

Mr. CLARK. It is a consideration for me, although it may not be for the committee.

The CHAIRMAN. You are just as good as they are and you are a witness here.

Mr. CLARK. Maybe I am and maybe I am not, but Mr. Brady would not thank me to come here before the committee without his appearance here and without his consent and launch off into an argument regarding the American Electric Railway Association.

The CHAIRMAN. You tell Mr. Brady you could not help yourself; that you looked intelligent and the committee called on you to aid them.

Mr. CLARK. I am perfectly willing to do what I can to aid the association, and probably I could say a good many things about it.

The CHAIRMAN. I want you to aid the committee.

Mr. CLARK. I would be very glad to do, and I think, Judge, if you will consider the testimony at the former hearing——

The CHAIRMAN. I am going to print that.

Mr. CLARK. You will probably come to the conclusion that there is a wide distinction between the two classes of railroads, and if you will make that provision——

The CHAIRMAN (interposing). You do not object, while you are here, to standing there and telling us some of the differences?

Mr. CLARK. I will tell you all I can, but there are numerous things.

The CHAIRMAN. Tell us some of them.

Mr. CLARK. In the first place, the electric railways, as you know, are small concerns. They are not like the big railroads running through several States. Their expenses are great; their debts are very heavy. We can not afford to do a great many things that you want the steam railroads to do. In addition to that, as Mr. Esch just suggested, 99 per cent of the electric trains that leave one point for another only consist of one car. They are absolutely controlled by the motorman and conductor. The chances of accidents of all kinds, such as we have on the steam railroads, are reduced to a minimum.

The CHAIRMAN. The same dangers do not exist.

Mr. CLARK. Absolutely not. The conditions are entirely different and distinct, and that is why we appeared before your committee at the last Congress and made this argument. I did not make it. The members of the committee made it, and as a result of that argument they put in an exception in the omnibus bill.

Mr. STERLING. There is no occasion for a brakeman to ride on top of a trolley car.

Mr. CLARK. Absolutely not, sir.

Mr. CAREW. Do you have any accidents from conductors running along the running board of open cars and being struck by side obstructions?

Mr. CLARK. I do not think so. The committee has all of that data on hand. I have not the data.

Mr. CAREW. I remember trying such a case once.

Mr. CLARK. That may be true. Those things are liable to happen. I could not say they have not happened. There is one other point I would like to mention. When the securities matter came up in your committee, it got through without the knowledge of the American Electric Railway Association, and we appeared before Senator Newlands's committee and made the argument that those provisions should not apply to us, and as a result of our argument, or as a result of the hearing, Mr. Newlands very frankly admitted that there was a distinction and made the distinction in the bill which he introduced in the Senate. I think when you talk to the members of the committee privately they all admit that they do not mean that these provisions should apply to the electric railways; but as a matter of fact, if you will read the bills you will find that if they pass as introduced, without any amendment, they would apply to electric railways.

Mr. STERLING. Let me ask you another question. There are some regular railroads now run by electricity?

Mr. CLARK. Yes; that was provided for.

Mr. STERLING. It would not do simply to except electric railways.

Mr. CLARK. No; that was provided in the amendment of Senator Newlands, and I think you will agree with me, it is a very good amendment:

The term "common carrier railroad corporation," as used in this section, shall not be construed to include street railway lines or electric interurban lines unless they form a part of a railroad system operated in part with steam.

That will make provision for your suggestion.

Mr. ESCH. Let me call attention to the accident statistics on electric railroads. In 1915 there were no accidents reported in coupling, neither was there in 1914. There were no accidents reported from overhead obstructions in either year. By falling from cars there were 16 injured in 1915 and 1 killed, and 13 injured in 1914.

Mr. CAREW. From sidewiping?

Mr. SIMS. Electric cars all over the United States?

Mr. CLARK. Yes, sir.

Mr. SIMS. That is practically nothing.

Mr. CLARK. That is practically nothing, but if you gentlemen pass these bills as they are introduced and make no distinction, we are compelled to do the things the bills provide for.

Mr. SIMS. Is the amendment of Senator Newlands which you just read satisfactory?

Mr. CLARK. Absolutely; we were perfectly satisfied with that amendment. If you will put that amendment in these bills, then we have nothing further to say.

Mr. PARKER of New Jersey. I wish you would tell us something about accidents from going around curves and from sidewiping.

Mr. CLARK. I could not tell you about that, Mr. Parker. You may find something in the hearings about it.

Mr. CAREW. There is nothing in there about sidewiping.

Mr. SIMS. But in the whole year only 14 were killed.

Mr. ESCH. 14 were injured.

Mr. SIMS. How many were killed?

Mr. ESCH. Only one.

Mr. PARKER of New Jersey. Only one passenger?

Mr. ESCH. No; this refers to railroad employees.

Mr. CLARK. You understand, Mr. Parker, that the people connected with the railroads know all of these facts but they have not furnished them to me. They expected to appear here.

Mr. ESCH. In 1913 there were 35 killed and 2,465 injured on electric railroads in the United States.

Mr. STERLING. Does it tell how many were injured by the electric current?

Mr. ESCH. It does not differentiate.

Mr. SIMS. That applies to all street-car companies whether they do an interstate business or not?

Mr. ESH. Yes.

Mr. SIMS. The number that would apply to street-car companies affected by this bill would be negligible.

Mr. ESCH. It would be comparatively small.

Mr. PARKER of New York. I would like to ask how you would comply with the provisions of this bill if they were left as they are now, where you have to go through a city street and you can not get the proper clearance between the tracks?

Mr. CLARK. I could not tell you, sir. I will be very frank with you about that. Some of the gentlemen on the committee who want to appear here could tell you those facts, because they keep posted on all such facts.

Mr. SIMS. Does not every city make its own regulations?

Mr. CLARK. Absolutely.

The CHAIRMAN. I was just going to ask you if that was not the best reason for exempting street car companies?

Mr. CLARK. That is one of the reasons.

The CHAIRMAN. In all municipalities they usually have local regulations?

Mr. CLARK. Yes; and they are very stringent.

The CHAIRMAN. They have regulations about slow running and stops and entire regulation of their operations?

Mr. CLARK. And they are very stringent, I may say. The electric railways are even more subject to such rules than steam railroads, because not only have we the Interstate Commerce Commission, but we also have the State commissions to overlook our affairs.

Mr. SIMS. And also the city authorities?

Mr. CLARK. Yes.

Mr. COADY. And where they carry mail they stop to take on the mail and do not catch it as they go along.

Mr. CLARK. I think so. I do not know of any instance where they do as the steam railroads do; that is, take it as they go along.

The CHAIRMAN. If we conclude to exempt your electric cars from the operation of the clearance bill, you are not going to insist on our following Senator Newland's plan of making new definitions?

Mr. CLARK. No; all we want is to have the electric railways exempted from the operation of the bill. You can put it in such language as you please.

Mr. SIMS. That is not a total exemption.

Mr. CLARK. It is an exemption of all electric railways unless they are operated partly by steam.

Mr. SIMS. That is what I had in mind. Those that are operated or connected with steam railroads will still come under the provisions of this bill.

Mr. CLARK. Absolutely. This suggestion was Senator Newlands's own suggestion. We suggested to Senator Newlands the same amendment that we suggested to Mr. Stevens's, subcommittee of your committee.

The CHAIRMAN. It is getting so now that everybody now who writes a bill puts a new glossary in it and it is filled with definitions. It is getting so that finally you will have on the statutes a dozen definitions for the same thing.

Mr. CLARK. And the first thing you know you will get all mixed up. Mr. Stevens's subcommittee, after hearing us, as per Part VI of your hearings, put in this extra section, which covers the whole ground:

> That the provisions of this act shall not apply to electric street railways or electric interurban railways.

That is all there is of the provision, and it seems to me that is all that is necessary.

Do you think, Mr. Chairman, that it is necessary for Mr. Brady and the members of the committee to appear here?

The CHAIRMAN. Does the statement which you have submitted contain all you want to say?

Mr. CLARK. On this one subject, yes. We might talk for a month on this whole subject. Your subcommittee took one day on this subject and another day on the other subject, and in both instances they agreed to our suggestions.

The CHAIRMAN. I think the clearance bill is all that the committee's attention is directed to now.

Mr. CLARK. If there is any other bill on which you would like to hear the committee they would be very glad to appear. They are very able gentlemen and made a very able statement to your committee last Congress.

(The committee thereupon adjourned.)

ARGUMENT IN RELATION TO H. R. 9216.

By H. B. PERHAM, president of the Order of Railroad Telegraphers.

[illegible] amendments to the so-called hours-of-service law, [illegible]

law was an eight-hour law, but during its progress through both branches of Congress it was amended so that 9 hours, 13 hours, and, under certain conditions, 17 hours were provided for a day's duty, shift, or trick. During the course of its passage serious defects crept into the bill, the principal one was that the 9-hour period was not made continuous. It was supposed, in the first place, that where a 9-hour period was provided in the law that it would be deemed a continuous period, but the railroad managers' rulings and the decisions of various courts made it clear that two or more constructions may be placed upon the word "period." In United States *v.* Atchison, Topeka & Santa Fe Railway Co., decided April 21, 1909, it was ruled that the 9-hour period might be divided into two or more periods. The result is a partial nullification of the law in that the employing companies, with the Supreme Court decision for their authority, have divided up the 9-hour period and the 13-hour period to suit their convenience.

We know of instances where two men are working a 24-hour period every day by splitting the tricks, but neither man works longer than a total of 9 hours.

Other instances where two men work nine-hour tricks the third man working six hours at his regular business and three hours at something else.

With relation to the 13-hour man, we have instances where the 13-hour period is so divided that the men work for a stretch of 16 hours every day, but they are not on duty in their offices more than a total of 13 hours.

Many 13-hour men commence their trick at 10 p. m. and are on and off duty until 4 p. m. the next day.

Where but one man is employed (and the majority of railroad telegraphers work at such places), the 13-hour provision applies, the splitting and spreading of tricks is permissible, the hours of service may, and do commence at any time of the day or night.

The verification of each and every one of these assertions are in the records of the hours-of-service bureau of the Interstate Commerce Commission.

On account of the defects developed a bill had been framed to cover them, and a straight 8-hour shift has been provided for which shall be wholly within the limits of a continual shift, and after that duty has been performed the employee is not required or permitted to resume duty until the expiration of 16 hours. This may seem a drastic provision, but whether it is or it is not, it is apparently the only method by which the employing companies may be held down to an observance of the law.

With reference to a statement of a witness made on April 27 respecting this bill having too broad a scope wherein it covers switch tenders, yardmasters, conductors, enginemen, and others, we admit that such was our intention, and it is generally conceded by all classes of employees that eight hours' service is sufficient work for any man. In fact, all classes are now contending for the eight-hour day. (See statement of a case, Exhibit No. 1.)

In reply to the contention of the same witness respecting the bill under discussion not providing for transfer time, we state that the existing hours of service law does not provide for transfer time, and that the transfers are made without any violation of the act. With all due respect to the witness, who claimed that he had many years of actual practical experience, and who further stated that he had known of a case where it took an hour to make a transfer, I have to say that I have worked more than 20 years in the business and never knew of such an instance. A great number of employees have told me that about three minutes is the usual time to make a transfer, and that they never consider themselves on duty while making such a transfer. The witness testified that the present law is safe and practical. It must not be forgotten that the railroads opposed the hours of service law as vigorously as they now oppose the present bill. What looked to them as a bad enactment at that time is now declared to be good and safe and practical. The witness testified that an eight-hour law would not promote public safety. We point out that the nine-hour law did promote public safety, and that the records of the Interstate Commerce Commission testify eloquently to that fact. A witness from the Atchison, Topeka & Santa Fe Railway testified that his company would have to reduce the service if this bill became a law, even at a station where only one man is employed. This means that that particular town would be without a railroad agent or a telegrapher because of the expense. As the general run of wages of a station agent and telegrapher on the Atchison, Topeka & Santa Fe Railway is between $33 and $50 per month, it would indicate that it would not cost much to put on a second man.

Several of the witnesses testified as to the unimportance of the work of a telegrapher, signalman, station agent, etc. They also stated that they had many years of experience in that line of work. We believe that the length of time that they have been in the official class and the exuberance of their zeal for their employer

has simply caused them to forget. We call to your attention that where railroads have superannuation funds for the benefit of aged and disabled employees that there are few, if any, instances where telegraphers' and signalmen's names appear on the list. The inference is plain that men do not live long enough at such work to become the beneficiaries of a superannuation fund. The fact is, and it is generally conceded, that the men who look after the movement of trains by means of train orders and signals occupy a very important and arduous position—that the welfare of the traveling public and of their fellow employees is largely in their hands at all times.

Stress was laid upon the point about a telegraph operator taking one order and delivering it to a train, with the remark that it was not a nerve racking process. The last time I worked on a railroad I remember having 75 train orders on my desk at one time to deliver to about 14 different trains running in three different directions. To fail to deliver any one of these orders to a train or to deliver an order to the wrong train would likely result in a fatal accident and my imprisonment.

Where men are in an occupation where by inadvertance they may cause death, personal injuries, and loss of property, it is difficult to understand the mental attitude of those who say they do not hold important positions.

With regard to that part of the bill reading, "This proviso does not apply to employees who in case of collisions, derailments, slides, washouts, or personal injuries," this is the author's method of describing what others would term "emergencies." At so many places and by so many persons the word "emergency" has been construed in such a manner as to defeat the aims and purposes of the law. We have no objection to train and engine crews getting their own orders in an actual bona fide emergency case. But the experience during eight years that the hours-of-service law has been in operation indicates that not only railroad officials but even the judges in the courts vary in their attempts when trying to construe the word "emergency." We therefore intend to be more explicit and avoid the complications that have arisen under the present law.

We know of instances where night telegraph offices along a whole division of railroad have been closed, telephone booths erected at stations, and trainmen instructed to go there and get their orders. This is not emergency work.

We know of other instances where switch locks are put on station doors and train crews are instructed to go in and get their train orders regularly at night when there is no agent or telegrapher on duty. That is not emergency work.

We know that delays caused by hot boxes, delays on account of leaky engines, heavy trains, and light power, have all been treated as emergencies, even where such incidents may be the rule instead of the exception.

It is the misuse and false interpretation of the word "emergency" which has prompted the author of the bill to use other words that more closely express our meaning.

In a statistical analysis of carriers' monthly hours-of-service reports, dated November, 1915, issued by the Interstate Commerce Commission, table 3, pages 12, 13, 14, and 15, is given a tabulation of telegraph operators who were on duty more than 9 hours in continuously operated day and night offices; also those on duty more than 13 hours in offices operated only during the daytime. The totals are indicated on page 15. Totals for the years 1913, 1914, and 1915 will be found on page 22. An interesting comparison on this page will be noted wherein it shows the combined totals of all instances where trainmen continued on duty for longer periods than 16 hours. In 1913, total, 263,274; in 1914, total, 131,881, showing a decrease of over 50 per cent; and in 1915, total, 59,915, indicating another decrease of over 50 per cent from the preceding year. A glance at the totals concerning the telegraph operators, especially respecting the 13-hour men, indicated that the decrease has been very small and that remedial legislation is necessary. (Exhibit No. 2.)

This bill was not framed hastily; the words and sentences have been so carefully put together that to my mind they scientifically cover the subject as it ought to be covered.

The branch-line provision may be construed to mean 10 hours of service to suit local conditions; the 10-hour trick may be split. It is the most elastic part of the bill, and it is designedly so.

The hard and fast rule does not apply to the branch lines where traffic is sparse.

So many hearings were held upon this subject during the life of the Sitxty-second and Sixty-third Congresses and so many reports made thereon, and these having already been printed and available, it seems hardly necessary to duplicate the work. I therefore close now with this brief argument, and sincerely hope that in the interest of public safety the telegraphers' eight-hour bill will become a law.

Exhibit No. 1.

DECISIONS UNDER THE HOURS OF SERVICE ACT.

United States Circuit Court of Appeals, Fifth Circuit. No. 2741. The United States of America, plaintiff in error, *v.* Florida East Coast Railway Co., defendant in error. Upon writ of error to the District Court of the United States for the Southern District of Florida. Decided April 5, 1915.

A conductor of an interstate railway train who is required or permitted during his run to stop at stations and by the use of the telephone to report, transmit, receive, or deliver train orders pertaining to or affecting his train is not embraced within the terms of the proviso limiting the hours of service of operators to 9 or 13 hours, and, therefore, a conductor charged with such duties as to his train orders may be required and permitted to be and remain on duty for 16 hours in a 24-hour period.

H. S. Phillips, Fred Botts, and Philip J. Doherty for plaintiff in error.
A. V. S. Smith and Egford Bly for defendant in error.
Before Pardee and Walker, circuit judes, and Maxey, district judge.

STATEMENT OF THE CASE.

The following statement of the case, appearing in the brief for the Government, is substantially correct:

"This case was brought by the United States attorney upon suggestion of the Attorney General at the request of the Interstate Commerce Commission and upon information furnished by the commission. The action is based upon the act of Congress known as 'An act to promote the safety of employees and travelers upon railroads by limiting the hours of service of employees thereon,' approved March 4, 1907, contained in the Thirty-fourth Statutes at Large, page 1415, the action being based on sections 2 and 3 of said act.

"Each of the four counts are practically identical, the only difference being a change of dates, names, and the time or interval of time within which the alleged violation took place; also the change of the number of the train and the station. However, the principle of law as applicable to each count is identical. The argument, therefore, will be confined to the first count, which alleges that E. M. Little, on January 10, 1914, at and between the offices of New Smyrna and Fort Pierce, in the State of Florida, being an employee of the defendant, was required and permitted to remain on duty for a longer period than 13 hours in 24 hours, to wit: From 7 a. m. to 11 p. m. on said date; that the said E. M. Little was an employee, regularly and generally engaged in and connected with the movement of its trains, said trains being used in the movement of interstate traffic, and was regularly and generally required and permitted by defendant to use the telephone in the several offices and stations of the defendant to report, transmit, receive, and deliver orders pertaining to and affecting the movement of trains; and that said E. M. Little while required and permitted to remain on duty as aforesaid used said telephone in defendant's office at Quay and Lyrata and reported, transmitted, received, and delivered orders pertaining to and affecting the movement of trains."

The declaration filed by the Government contains four counts; and in order to render more definite the allegations of the several counts and to present with greater clearness the precise question for decision, counsel for the parties entered into the following stipulation:

"It is further stipulated and agreed between the counsel for the respective parties herein that the employee mentioned in each of the counts of the declaration, and who is alleged therein to have been required or permitted to use the telephone in the movement of trains after the expiration of 13 hours of service, was a conductor of the particular train mentioned in the respective count, and that the declaration shall be so construed and understood for all the purposes of this writ of error, it having been so understood and considered by the judge of the district court upon the argument of the demurrer. Plaintiff in error hereby withdraws from its brief heretofore filed in said cause all reference to any question which may have been raised in said brief with reference to any omission in said declaration as to the particular duties of the employee mentioned in each of the several counts, and requests that such references in said brief shall be disregarded by the court."

Demurrers were interposed by the railway company to each count, which, being sustained and the declaration dismissed, the Government excepted and has brought the case here for revision of the judgment.

OPINION OF THE COURT.

MAXEY, *District Judge:*

The question submitted for consideration involves the construction of the first proviso of section 2 of the act, approved March 4, 1907, commonly known as the "Hours of Service Act," the second proviso not being pertinent to the present inquiry. (34 St., pt. 1, p. 1415.) The precise question may be thus stated: Is the conductor of an interstate railway train, who is required or permitted during his run to stop at stations to report, transmit, receive, or deliver orders pertaining to or affecting his train, embraced within the terms of the proviso? The entire section is in the following words:

SEC. 2. That it shall be unlawful for any common carrier, its officers or agents, subject to this act to require or permit any employee subject to this act to be or remain on duty for a longer period than sixteen consecutive hours, and whenever any such employee of such common carrier shall have been continuously on duty for sixteen hours he shall be relieved and not required or permitted again to go on duty until he has had at least ten consecutive hours off duty; and no such employee who has been on duty sixteen hours in the aggregate in any twenty-four hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty: *Provided,* That no operator, train dispatcher, or other employee who by the use of the telegraph or telephone dispatches, reports, transmits, receives, or delivers orders pertaining to or affecting train movements shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four hour period in all towers, offices, places, and stations continuously operated night and day, nor for a longer period than thirteen hours in all towers, offices, places, and stations operated only during the daytime, except in case of emergency, when the employees named in this proviso may be permitted to be and remain on duty for four additional hours in a twenty-four hour period on not exceeding three days in any week: *Provided further,* The Interstate Commerce Commission may, after full hearing in a particular case and for good cause shown, extend the period within which a common carrier shall comply with the provisions of this proviso as to such case."

It will be observed that the first part of the section refers to employees generally subject to the act and renders it unlawful for a carrier to require or permit any employee to be or remain on duty for a longer period than 16 consecutive hours, etc. The proviso, however, excepts operators, train dispatchers, and other employees who by the use of the telegraph or telephone transmit, report, etc., orders pertaining to or affecting train movements from the general language thus employed, and provides for them a special rule. For reasons deemed wise by the Congress it was thought that telegraph operators, train disptchers, and other employees of that class should have shorter hours for work and longer intervals of rest; and hence the provision directly applicable to them, that their work hours should be limited to 9 and 13, respectively, accordingly as they might be employed in towers, offices, places, and stations continuously operated night and day, or in towers, offices, etc., operated only during the daytime.

The purpose of adding the proviso was to prescribe shorter hours for work for telegraph and telephone operators and other employees whose primary and principal duty require them to operate telegraphic instruments and telephones for transmitting, etc., orders affecting train movements generally and that such construction is correct is evidenced by the requirement that such employees must perform their duties at a fixed place and that their hours of service at such place shall not exceed those named in the proviso. In this connection it is well to recall the language of the proviso: "Provided that no operator, etc., shall be required or permitted to be or remain on duty for a longer period, etc., *in* all towers, offices, places, and stations," etc., thus evidencing the intention that such employees must have a fixed place for work, and at such place they should not be required or permitted to work a longer time than the number of hours prescribed. If the proviso be construed to include a conductor, what number of hours, it may be asked, shall he be permitted to work during the 24-hour period? Shall it be 16, 13, or 9 hours? Having regard for the language of the proviso, it will be scarcely possible to give a satisfactory reply to the question—a difficulty which affords additional ground for holding that as to such employee the proviso is altogether inapplicable.

It seems to us that it would plainly violate accepted canons for construing statutes to include in the proviso a train conductor, having no fixed place for work except on a moving train, and who, under the first clause of section 2, may be required or permitted to work for the period of 16 hours. His primary and chief duty requires him to look after his train, and stopping at a station to transmit or receive an order affecting his immediate train is a mere incidental service which can not operate to classify him

as a telegraph or telephone operator or train dispatcher. The contention of counsel for the Government is that train conductors are included in the words of the proviso, "or other employee," who by the use of the telegraph or telephone dispatches, reports, etc. We have endeavored to show that it was not the intention of the lawmakers to so include them. But for another reason the construction insisted upon by the Government is thought to be erroneous. The words "or other employee" evidently refer to employees charged with duties similar to those performed by telegraph operators and train dispatchers, in accordance with the following recognized rule for the construction of statutes: "In the enumeration of particulars, general and comprehensive terms are sometimes used in the construction of which reason and good sense require that if you would not violate the intention of the writer their meaning must be restricted to things of a like nature and description, with the particulars among which they are found." (3 Words & Phrases, 2328.) Or, to state the rule in somewhat different language, "*Ejustem generis* means of the same kind or species. The words are used to designate a rule of construction that 'when an author makes use, first, of terms, each evidently confined and limited to a particular class of a known species of things, and then, after such specific enumeration, subjoins a term of very extensive signification, this term, however general and comprehensive in its possible import, yet when thus used, embraces only things *ejusdem generis*'; that is, of the same kind or species with those comprehended by the preceding limited and confined terms." (3 Words & Phrases, 2328.)

This proviso of section 2 of the "hours-of-service act" was construed by the Circuit Court of Appeals for the Eighth Circuit in Missouri Pacific Railway Co. *v.* United States, 211 Fed., pages 893–897. At page 897 it was said by the court:

As the word "employee" in the proviso of section 2 includes "operator" and "train dispatcher," for the latter are both employees, the conclusion here is irresistible that Congress intended by the use of the words "other employees" to mean an employee engaged primarily in the same class of service as would be performed by an operator or train dispatcher.

In our construction of the statute we have steadily kept in view the beneficent purpose of the law. If we have construed it properly, the Congress may enact such further legislation as may be deemed best for the public interests.

We are of the opinion that the judgment should be affirmed, and it is so ordered.

WALKER, *Circuit Judge*, dissents.

The Circuit Court of Appeals for the Fifth Circuit, in United States *v.* Florida E. C. Ry. Co. (222 Fed., 33), held that a conductor who is regularly and generally required to use the telephones at way stations where no telegraph operators are maintained, for the purpose of reporting his train and receiving orders from the dispatcher, is not an operator or "other employee," comprehended within the terms of the act, whose hours of service can not exceed 13 hours in any one day.

DECISIONS UNDER THE HOURS-OF-SERVICE ACT.

United States *v.* Atchison, Topeka & Santa Fe Railway Company. In the district court of the United States for the northern district of Illinois. Decided April 21, 1909.

1. At defendant's railroad yard called Corwith is a telegraph office where two operators are employed; the day man works from 6.30 o'clock a. m. until 6.30 o'clock p. m., with three hours off duty from 12 o'clock noon until 3 o'clock p. m.; the night man works from 6.30 o'clock p. m. until 6.30 o'clock a. m., with three hours off duty from 12 o'clock midnight until 3 o'clock a. m. It appears that the bulk of the work done by these two men pertains to general railroad business other than the movement of trains, but during each day and night one or two interstate freight trains pull out of Corwith. This train movement is in compliance with clearance orders telegraphed, in each instance, by defendant's division dispatcher to Corwith and by the operators there taken from the wire and delivered to the train crews; *Held*, That this office is clearly one "continuously operated day and night" within the meaning of the hours of service act; that a twenty-four-hour period is twenty-four consecutive hours, and a nine-hour period is nine consecutive hours; and that the nine-hour period during which the law authorized the day man to be at work expired at 3.30 p. m., and inasmuch as he was required or permitted to be "on duty" three hours thereafter, the law has been violated; and so with respect to the night man.

2. The mere fact that employees are concerned but a trifle with the movement of trains, or are concerned with the movement of but a few trains, does not except them from the operation of the statute, as it expressly holds the term "employees" to mean persons actually engaged in or connected with the movement of *any* train.
3. The word "period" as used in section 2 of the hours-of-service act is the antithesis of "aggregate" It implies continuity, unbrokenness, uninterruptedness, as distinguished from "aggregate," which signifies the sum or total or gross amount of separate and distinct particles.
4. Defendant's motion for an order requiring the United States to elect one count and proceed thereon is without merit. The language of the statute is plain and provides that the carrier shall be liable "for each and every violation." This means each and every twenty-four-hour period in which the prohibition of the law is ignored.
5. It can hardly be that Congress had it in mind, by the use of the word "continuously," to place it in the power of a railway company to except a night and day office from the operation of the law by the simple process of closing the office and sending the operator away for a few minutes, or, as in this case, for three hours.

Edwin W. Sims, United States attorney; Harry A. Parkin, assistant United States attorney; and Philip J. Doherty, special assistant United States attorney, for the United States.

James L. Coleman, Lee F. English, and Robert Dunlap for the defendant.

OPINION OF THE COURT DENYING DEFENDANT'S MOTION FOR AN ORDER DIRECTING THE JURY TO RETURN A VERDICT OF NOT GUILTY.

LANDIS, *District Judge:*

In this proceeding the defendant is charged with a violation of the statute which was enacted to limit the hours of labor of railway employees having to do with the movement of trains. The evidence having all been heard, the defendant moves for an order directing a verdict of not guilty. The controversy relates to that provision of the law respecting telegraph operators employed at offices operated continuously day and night. The statute is as follows:

(Section 1 enacts that the provisions of the law shall apply to railway common carriers, interstate, and provides that "the term 'employees' * * * shall be held to mean persons actually engaged in or connected with the movement of any train.")

"SEC. 2. That it shall be unlawful for any common carrier, its officers or agents, subject to this act, to require or permit any employee subject to this act to be or remain on duty for a longer period than sixteen consecutive hours, and whenever any such employee of such common carrier shall have been continuously on duty for sixteen hours he shall be relieved and not required or permitted again to go on duty until he has had at least ten consecutive hours off duty; and no such employee who has been on duty sixteen hours in the aggregate in any twenty-four-hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty: *Provided*, That no operator, train dispatcher, or other employee who by the use of the telegraph or telephone dispatches, reports, transmits, receives, or delivers orders pertaining to or affecting train movement shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four-hour period in all towers, offices, places, and stations continuously operated night and day, nor for a longer period than thirteen hours in all towers, offices, places, and stations operated only during the daytime, except in case of emergency, when the employees named in this proviso may be permitted to be and remain on duty for four additional hours in a twenty-four-hour period on not exceeding three days in any week: *Provided further*, The Interstate Commerce Commission may after full hearing in a particular case and for good cause shown extend the period within which a common carrier shall comply with the provisions of this proviso as to such case."

The remaining sections provide for the enforcement of the law, the imposition of penalties, and specify exceptions to its operation (which are not material here).

For the United States the claim is that this law forbids the operator's employment for more than nine hours in any twenty-four hour period, and requires the employment to be continuous.

For the defendant it is contended that the law authorizes the employment of operators nine hours in the *aggregate* in any twenty-four-hour period; that the office here

is not one "operated continuously night and day;" and further, that the employees involved "are not persons actually engaged in or connected with the movement of any train" within the meaning of the law. The facts are as follows: The defendant is a railway common carrier from Chicago to points in States west of the Mississippi River and has a railroad yard called Corwith, located some distance from the main line in the western part of Chicago; at this yard is a telegraph office where two operators are employed. The day man works from 6.30 o'clock in the morning until 6.30 o'clock in the evening, with three hours off duty from 12 o'clock noon until 3 o'clock in the afternoon. The night man works from 6.30 o'clock at night until 6.30 the next morning, with three hours off duty from 12 o'clock midnight until 3 o'clock a. m. The bulk of the work done by these two men pertains to general railroad business other than the movement of trains. However, during each day and night, one or two freight trains, destined interstate, pull out of Corwith and move west over the rails of the main line. This train movement is in compliance with clearance orders telegraphed in each instance by defendant's division dispatcher to Corwith and by the operators there taken from the wire and delivered to the train crews.

The court is of the opinion that this office is clearly one "continuously operated night and day" within the meaning of the statute. The manifest purpose was to apply the provisions of the law to all employees having to do with train movement, and knowing that some railway telegraph offices were open only during the daytime, while others were open night and day, Congress inserted as a regulation for the latter class the provision respecting those "continuously operated night and day." It can hardly be that Congress had it in mind by the use of the word "continuously" to place it in the power of a railway company to except a night and day office from the operation of the law by the simple process of closing the office and sending the operator away for a few minutes, or, as in this case, for three hours. Nor does the mere fact that employees are concerned but a trifle with the movement of trains, or are concerned with the movement of but a few trains, except them from the operation of the statute. The language of the law is: "The term 'employees' * * * shall be held to mean persons actually engaged in or connected with the movement of *any* train."

The remaining question is not so free from difficulty. While the purpose of Congress "to promote the safety of employees and travelers upon railroads by limiting the hours of service of employees thereon" clearly appears from the title of the act, it must be admitted the provision relating to persons engaged in the telegraph service might have been more happily phrased to accomplish that purpose. However, as will be observed from an examination of the whole of sections 1 and 2, it was the object of Congress to place a limit on the time of service of all railway employees having to do with the movement of trains interstate. It also clearly appears from section 2 that it was definitely and distinctly in the legislative mind that there were two classes of such employees, namely, those whose work was *continuous* and those whose work was *intermittent*. Accordingly, for the former class, it was provided that the limit should be "sixteen consecutive hours," to be succeeded by ten consecutive hours off ffuty, and for the latter class the limit is placed on the *aggregate* of service, the language being: "No such employee who has been on duty sixteen hours in the aggregate in any twenty-four-hour period shall be required or permitted to continue or again go on duty without having had at least eight consecutive hours off duty." Then follows the special proviso for persons engaged in the telegraph service: "That no operator, train dispatcher, or other employee who by the use of the telegraph * * * transmits or delivers orders pertaining to or affecting train movements, shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four hour period in all * * * stations continuously operated night and day, nor for a longer period than thirteen hours * * * in all stations operated only during the daytime, except in cases of emergency, when the employees named in this proviso may be permitted to be and remain on duty for four additional hours in a twenty-four-hour period on not exceeding three days in any week."

The defendant urges that this language should be read as if it were as follows: "That no operator * * * shall be required or permitted to be or remain on duty for more than nine hours in the aggregate in any twenty-four hour period."

But the use of the word "period" in the nine hour provision of the act excludes this construction. "Period" is the antithesis of "aggregate." It implies continuity, unbrokenness, uninterruptedness, as distinguished from "aggregate," which signifies the sum or total or gross amount of separate and distinct particles. Thus reference is made to the "Revolutionary period," the "Reconstruction period," the "twenty-four-hour period" (as used in the act itself), each of which expressions has a definite and well-understood meaning which is diametrically opposed to and which excludes the idea that is the basis of the defendant's claim. Moreover, immediately preceding

the provision under consideration is the language used by Congress in dealing with the same subject as related to railway employees in general, which, as before observed, distinctly provides a limitation on the hours of service in the *aggregate* as distinguished from continuous or unbroken service. And in the subsequent provision relating to day offices, where the service is prohibited for a longer period than thirteen hours except in cases of emergency, when four additional hours' service in a tewnty-four-hour period is allowed, and in the concluding proviso authorizing the Interstate Commerce Commission, for good cause, to extend the period in which the carrier shall comply with the act, the word is used in a sense contrary to the meaning which the defendant argues should be given to it in the nine-hour clause. Can it be that Congress intended the court to give the word as used here a meaning opposed not only to its true import, but opposed as well to the sense in which the word is used elsewhere in the same section?

Being of the opinion that a twenty-four-hour period is twenty-four consecutive hours, and that a nine-hour period is nine consecutive hours, my conclusion is that the nine-hour period during which the law authorized the day man to be at work expired at 3.30 p. m.; and that inasmuch as he was required or permitted to be "on duty" three hours thereafter, the law has been violated. And so with respect to the night man.

The defendant's motion for an order requiring the United States to elect one count and proceed thereon is without merit. The language of the statute is plain and provides that the carrier shall be liable "for each and every violation." This, I take it, means each and every twenty-four-hour period in which the prohibition of the law is ignored.

Let there be an order overruling both motions of the defendant.

Exhibit No. 2.

Interstate Commerce Commission. A statistical analysis of carriers' monthly hours of service reports covering all railroads which reported during the year ending June 30, 1915, an aggregate, respectively, of 25 or more instances in which employees were on duty for periods other than those provided by the Federal hours-of-service act, together with a comparative summary covering the fiscal years ending June 30, 1913, 1914, and 1915.

INTRODUCTORY NOTE.

The following tables comprehend all instances in which employees of railroads were on duty for periods not in conformity with those provided by the hours-of-service act as shown by the monthly reports of railroads reporting, respectively, during the fiscal year ending June 30, 1915, an aggregate of 25 or more instances of the various classes of excess service.

Table I, pages 4, 6, 8, and 10, refer to instances in which employees in train service were on duty during the year for longer periods than 16 consecutive hours. The roman figures in this table refer to instances of excess service attributed by the carriers to causes arising prior to the expiration of 14 hours from the commencement of the various periods of service; while the heavier figures indicate those instances attributable to delays occurring subsequent to such period of 14 hours.

The causes for the foregoing instances of excess service and the apportionment to these various causes are shown in Table II, pages 5, 7, 9, and 11.

The roman figures in this table, exclusive of combined totals, refer to instances of excess service attributed by the carriers to causes of delays immediately affecting the trains on which the men involved were respectively employed, the items shown in heavier figures referring to such instances attributable to delays immediately affecting other trains in relation with which such trains were running at the time.

This table illustrates the difference in the number of instances of excess service attributable to delays which might have been prevented, as compared with the total number of such instances reported. It also affords a graphic contrast as between the various railroads with reference to predominant causes of delays. The attention of directing officials of railroads, therefore, is particularly invited to the data shown thereon, to the end that instances of excess service attributable to preventable causes may be eliminated.

In apportioning the various instances of excess service among the designated causes, the reasons given by the carriers themselves, wherever practicable, have been accepted as the primary causes of excess service. Where several independent causes of delay,

however, have been reported as responsible for a single instance of excess service, the initial cause disclosed by the report in question as responsible for the latest delay, but for the occurrence of which the given run might have been completed within the statutory period, has been considered as the primary cause of such excess service.

In this connection it is to be noted that the classification of causes shown in Table II has no relation whatever to the question of justification or excusability under the statute.

Table III, pages 12 to 15, inclusive, covers all those instances of excess service reported by the designated carriers in which employees in train service returned to duty without having had the requisite period off duty, or continued on duty after an aggregate service of 16 hours. This table also shows the excess service performed by telegraph operators.

A comparative summary of all instances of excess service covering the three years ending June 30, 1915, as reported by the designated carriers, is shown in Table IV.

TABLE I.—*A summary of instances in which employees in train service were on duty more than 16 consecutive hours during the fiscal year ending June 30, 1915.*

[NOTE.—The items shown below in heavy figures refer to instances of excess service attributable to causes arising subsequent to 14 hours from the time the men involved respectively went on duty. Railroads reporting fewer than 25 instances in the aggregate of all classes of excess service not enumerated. Figures taken from the carriers' monthly hours of service reports which are submitted under oath.]

Name of railroad.	Inclusive periods of continuous service in hours.																									
	16 to 17		17 to 18		18 to 19		19 to 20		20 to 21		21 to 22		22 to 23		23 to 24		24 to 25		25 to 26		26 to 27		27 to 28		28 to 29	
Alabama Great Southern R. R. Co.			4		5		6																			
Alabama, Tennessee & Northern Ry. Co.	23		24		39	**6**	29	**5**	6					**7**			6						6			
Arizona & New Mexico Ry. Co.			8				6		5		5	**5**			5		6									
Arizona Eastern R. R. Co.	12	**6**																								
Asherton & Gulf Ry. Co.					4		5						1		1											
Atchison, Topeka & Santa Fe Ry. Co.	323	**48**	276	**43**	213	**15**	88	**17**	47		52		25		32	**8**	39		15		5		5		11	
Atlanta, Birmingham & Atlantic R. R. Co.	64	**16**	56	**10**	36		5	**5**	25		15		5		10		6		6		10		5		10	
Atlantic & St. Lawrence Ry. Co.	10		12								5						5									
Atlantic City R. R. Co.	3	**3**	2	**3**								**4**		**2**	10			**5**								
Atlantic Coast Line R. R. Co.	146	**20**	134	**21**	69		30	**1**	31		26		7		9		12		5						7	
Augusta Southern R. R. Co.	29	**5**	20		6		10	**1**									3		2							
Baltimore & Ohio Chicago Terminal R. R. Co.	12	**6**	9		8		4																			
Baltimore & Ohio System	1,330	**784**	1,703	**337**	1,106	**151**	630	**56**	374	**25**	165	**19**	99	**8**	50		48		50		20		6		15	**5**
Bangor & Aroostook R. R. Co.	18	**6**	11		11		1		5		4		6		11											
Bessemer & Lake Erie R. R. Co.	39		18				7																			
Boston & Albany R. R. Co.	6		3		1		8		7																	
Boston & Maine R. R. Co.	31	**21**	109	**4**	67	**2**	34	**4**	13	**2**	4	**2**	4				1									
Buffalo & Susquehanna R. R. Corporation			3		5		2		3		4		5													
Buffalo, Rochester & Pittsburgh Ry. Co.	14		24	**8**	19		2		6		4		6													
Camas Prairie R. R. Co.											6															
Canadian Pacific Ry. Co.	5	**3**	15	**2**	9		2	**3**	1		3				2											
Carolina & North Western Ry. Co.	11				5		5																		6	
Carolina, Atlantic & Western Ry. Co.	5																									
Carolina, Clinchfield & Ohio Ry. Co.	18		34	**6**	23		18		8		21		21										10			
Central Indiana Ry. Co.	5	**30**	12	**5**		**5**					2															
Central New England Ry. Co.	8				14				6		6															
Central of Georgia Ry. Co.	79	**50**	91	**14**	17	**12**	22	**2**	16		5		1				5									
Central R. R. Co. of New Jersey	45		97	**6**	51	**4**	32	**6**	17		16		8		6		5									
Central Vermont Ry. Co.	25	**1**	41	**5**	30	**10**	10	**1**	27		1		2						2							
Charleston & Western Carolina Ry. Co.	5		10		16				7																	
Chesapeake & Ohio Ry. Co.	669	**118**	916	**133**	639	**26**	422	**20**	237	**10**	143	**15**	138	**6**	116		64	**5**	53	**5**	24		7		16	
Chesapeake & Ohio Ry. Co. of Indiana	33	**18**	62	**13**	31	**5**	40		10	**8**					8											
Chesterfield & Lancaster R. R. Co.		**5**			12						9															
Chicago & Alton R. R. Co.	78	**22**	70	**15**	35	**5**	33		8		5	**1**	5				5	**1**					5		5	
Chicago & Eastern Illinois R. R. Co.	66		43	**10**	37		15		25		16		5		5		5									
Chicago & Erie R. R. Co.	46	**26**	21	**2**	11	**5**	16	**6**			3															
Chicago & North Western Ry. Co.	148	**38**	139	**25**	65	**3**	46	**1**	41	**2**	24		30	**1**	20		11		5	**2**	1		8	**5**	8	

Chicago, Burlington & Quincy R. R. Co	401	183	410	118	187	28	166	14	105	5	76		41	2	13		7		16		5		8			
Chicago Great Western R. R. Co	46	18	37	17	27	5	2	6	7		5		7		6		14				10		5		14	
Chicago, Indiana & Southern R. R. Co	33	18	23		13		1																			
Chicago, Indianapolis & Louisville Ry. Co	52	11	32				10		15		5										2					
Chicago, Memphis & Gulf R. R. Co	4			6	6		6								4											
Chicago, Milwaukee & St. Paul Ry. Co	233	80	213	53	82	51	88	16	46	26	30	9	9	9	39	9	9	1	11		3	1	13	5		3
Chicago, Peoria & St. Louis Ry. Co. of Illinois	14	13	24	5	18		7				5				7		10		3							
Chicago, Rock Island & Gulf Ry. Co	14	19	13	14	10		10		5			1			5								1			
Chicago, Rock Island & Pacific Ry. Co	138	86	157	57	69	19	34	2	40	6	19	10	18	4	5		10		4				23	2		
Chicago, St. Paul, Minn. & Omaha Ry. Co			5	5							5															
Chicago, Terre Haute & Southeastern Ry. Co	51	6			9		5		4		2				5										1	
Cincinnati, Hamilton & Dayton Ry. Co	40	27	29		51		23		10				5		1		16									
Cincinnati, Lebanon & Northern Ry. Co	10		5		3										5											
Cincinnati, New Orleans & Texas Pacific Ry. Co	8		15				5		5																	
Cincinnati Northern. R. R. Co	16	23	11	3	21		6			5	6										5					
Cleveland, Cincinnati, Chicago & St. Louis Ry. Co	168	62	160	38	117	7	62	8	57	7	45	6	19		20		12		15						5	
Coal & Coke Ry. Co	293	38	190	33	158	11	99	6	41	6	50	7	40	6	21		20		25				7		7	
Colorado & Southern Ry. Co	59	32	109	21	32		30	5	12		5		5	2		4	5				6		2			
Colorado Midland Ry. Co	35	5	83	10	47	5	22		16		20	5	3		14		5									
Delaware & Hudson Co	41	32	75	16	19	12	10	5	2		5															
Delaware, Lackawanna & Western R. R. Co	26	22	46	12	24	2	10		2		11						7									
Denver & Rio Grande R. R. Co	113	23	162	9	109		50	1	28	5	10		39	1	15		15		21		4					
Denver & Salt Lake R. R. Co	182		116		64		55		55		19		18		24		6				7					
Detroit & Mackinac Ry. Co			6		14				1																	
Detroit & Toledo Shore Line R. R. Co	19	4	5		10							1														
Detroit, Grand Haven & Milwaukee Ry. Co	11	7					1	1		1																
Detroit, Toledo & Ironton Ry. Co	30	9	92	13	78	13	79	3	29		30	5	28	3	10	2	5				7		2		24	
Duluth & Iron Range R. R. Co	20		13		15					6																
Duluth, South Shore & Atlantic Ry. Co	6		18	5	6						10				1				4						5	
Elgin, Joliet & Eastern Ry. Co	45	20	29	15	11		10	5	5						5											
El Paso & Southwestern System	56	12	39	4	22		5		8				6				6	5								
Erie Railroad Co	163	17	93	21	65	12	59	2	24		14		6		7				5							
Escanaba & Lake Superior R. R. Co	5			5			5						5								5					
Florence & Cripple Creek R. R. Co	49	10	56	7	7		10		5		10		8		4		17									
Florida East Coast Ry. Co	15	12			10				5																	
Fort Dodge, Des Moines & Southern R. R. Co	8		4		4	4	1		4								4									
Fort Smith & Western R. R. Co	10		15																							
Fort Worth & Denver City Ry. Co	109	4	77		55		41		52	2	22	3	12		37		12		18		5		2		3	
Fort Worth & Rio Grande Ry. Co	30	11	20		10						5		6		5										5	
Gainesville & Northwestern R. R. Co	5		5	5	5		4								5											
Galveston, Harrisburg & San Antonio Ry. Co	81	21	44	3	38	6	6		26		5	5			5		10		5				5			
Georgia & Florida Ry. Co	16		28	6	18	5	4		5		4				15				5							
Georgia R. R.	10	4	39	2	16	3	8	2										5								
Georgia Southern & Florida Ry. Co	17	7	36		27		10	5			6	7			5											
Grand Rapids & Indiana Ry. Co	10	17	2				4		2		1															
Grand Trunk Western Ry. Co	50	24	70	19	46	1	12	1			10						1									
Great Northern Ry. Co	101	27	92	16	71	3	47	18	15	5	10		2		8	5	3		2						5	
Gulf & Ship Island R. R. Co	45	18	17	6	12		18	6																		
Gulf, Colorado & Santa Fe Ry. Co	144	47	199	32	72	14	34	2	47	6	27	5	25	6	14		8		12	4				5	5	
Gulf, Texas & Western Ry. Co	13		5	5																						
Hagerstown & Frederick Ry. Co	14		24		19												1				2					
Hocking Valley R. R. Co	6	48	5	17				2																		

TABLE I.—*A summary of instances in which employees in train service were on duty more than 16 consecutive hours during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Inclusive periods of continuous service in hours.																									
	16 to 17		17 to 18		18 to 19		19 to 20		20 to 21		21 to 22		22 to 23		23 to 24		24 to 25		25 to 26		26 to 27		27 to 28		28 to 29	
Houston & Shreveport R. Co.			15	6	8																5					6
Houston & Texas Central R. R. Co.	25	7	18	5	28		3	6	21		7	3		2	3		7				5		2		5	
Houston East & West Texas Ry. Co.	61	12	35	11	17		27		5		18		5				11		6		6					
Illinois Central R. R. Co.	87	58	96	47	84	14	50	1	18	10	26		11		8	2	5						3			
Illinois Southern Ry. Co.	14	5		9									6													
Illinois Traction System	8		1	2	2		4				3						1		4							
Indiana Harbor Belt R. R. Co.	16		24	2	4		2																			
International & Great Northern Ry. Co.	81	41	171	18	100	5	35		25		15		5		10				5		5					
Jonesboro, Lake City & Eastern R. R. Co.	5		15	9	5		5	1																		
Kanawha & Michigan Ry. Co.		8		2	4	1		2	2			2	5			1										
Kansas City, Clinton & Springfield Ry. Co.	5		10						5																	
Kansas City, Mexico & Orient Ry. Co.	24		68		70		29		5		15		2		16				10		5					
Kansas City, Mexico & Orient Ry. Co. of Texas	170	85	190	77	178	34	113	26	63	2	49	5	46	6	15	10	31		14		21	11			26	
Kansas City Southern Ry. Co.	105	44	182	54	85	18	100	6	63		57		32	5	6		12		7			5	5			
Lake Erie & Western R. R. Co.	7		5		5		10				5				5		7				1					
Lake Shore & Michigan Southern Ry. Co.	21	1	28		3																					
Lehigh & Hudson River Ry. Co.	13		9		12	1																				
Lehigh Valley R. R. Co.	179	12	179	13	99	13	72	4	51	8	24	2	17		6		2		8		6					
Long Island R. R. Co.	92	4	67		55	3	34	3	15		10	3	28		5		9	2	17	3	4	12	3	14	9	
Louisiana & Arkansas Ry. Co.			9	10																						
Louisiana & Northwest R. R. Co.	12	12	10		11		10		6	6			6													
Louisiana Ry. & Navigation Co.	69	28	96	11	76	11	53	5	36	1	27	6	49		15	1	15		12		17		10		5	
Louisiana Western R. R. Co.	2	6	10		5		3						5													
Louisville & Nashville R. R. Co.	192	32	165	14	114	10	109		34		11		15						10		10					
Macon & Birmingham Ry. Co.	6		5		5		14		1				6													
Maine Central R. R. Co.	11	10	4																							
Marshall & East Texas Ry. Co.	65	10	24	5	24		14			5	5		9		4											
Maryland & Pennsylvania R. R. Co.	74	6	33		24				7		6						5				6					
Michigan Central R. R. Co.	30	23	35	5	8		4	5			5															
Midland Valley R. R. Co.	10	5	5		6	5			6		5															
Milford, Attleboro & Woonsocket Street Ry. Co.			2		1		1		1				2		3		9									
Minneapolis & St. Louis R. R. Co.	85	28	93	30	80	6	80	1	38	5	47		3	5	5		5		10	5	2		5			
Minneapolis, St. Paul & Sault Ste. Marie Ry. Co.	52	51	63	27	70	42	17		5	7	7	2	10	1		1	1	1	1					2		
Minneapolis, St. Paul, Roch. & D. Elec. Trac. Co.	80	10	34	3	7	7	3		6							2	1									
Mississippi Central R. R. Co.	7	7							1				9				3									
Missouri & North Arkansas R. R. Co.	23	8	40	16	33			6	6				5		7					1						
Missouri, Kansas & Texas Ry. Co.	363	151	201	113	211	45	141	38	57	11	70	10	50	9	14	1	19	1	21		5	5	5		5	
Missouri, Kansas & Texas Ry. Co. of Texas	174	72	194	80	132	25	126	15	90	15	69	11	37		7		20	5	5	5	20	5	1	6		
Missouri, Oklahoma & Gulf Ry. Co.	89	35	106		87	1	23	12	31	1	37		16		6		16	5	6	5	5					
Missouri Pacific Ry. Co.	404	170	353	50	165	10	119	9	90	3	43	2	30	1	21	10	21				11		6			1

Mobile & Ohio R. R. Co.	61	18	39		55	5	4		22				12		5				6		5					
Morgan's Louisiana & Texas R. R. & S. Co.			29	1	23		12				11		12		10				5							
Nashville, Chattanooga & St. Louis Ry. Co.	60	18	47	5	29		17				11		5		5		6									
Nevada-California-Oregon Ry. Co.	20		25	15	8		4		8		8		9													
New Iberia & Northern R. R. Co.			10		5		2		1						5								5			
New Mexico Central R. R. Co.	4						2		6				2				2								4	
New Orleans & Northeastern R. R. Co.	5		29																							
New Orleans Great Northern R. R. Co.		37	21				5		5		5		4		5											
New Orleans, Texas & Mexico R. R. Co.	8		3		6		3						5				6									
New York Central R. R. Co.	31	15	27		13		4				2		3				1									
New York, Chicago & St. Louis R. R. Co.	30	12	4		10																					
New York, New Haven & Hartford R. R. Co.	14		5				1		4								2									
New York, Ontario & Western Ry. Co.	4	4		6	4		4		4																	
New York, Susquehanna & Western R. R. C.	4				10																					
Norfolk & Western Ry. Co.	383	45	266	27	194	4	40		49		39		24		4	7	22		15				10			
Norfolk Southern R. R. Co.		15	36	5	28	1					5						5									
Northern Pacific Ry. Co.	95	78	252	89	155	27	96	10	59	11	49	18	32		3	[illegible]	2	1	7		11	2	2			
Northwestern Pacific R. R. Co.	16		15		6		24		5				10		5		5									
Norwich & Westerly Traction Co.			4		6																					
Ohio River & Western Ry. Co.	9	5	15			4																				
Orange & Northwestern R. R. Co.	10		5		15				10						5											
Oregon Short Line R. R. Co.	7	13	18	5	[illegible]	6	4		6		5						1									
Oregon-Washington R. R. & Navigation Co.	24	11	13		20		34		12		13						5				3		5		11	
Pacific Electric Ry. Co.	6		3																							
Pacific Ry. & Navigation Co.	6		5										6													
Panhandle & Santa Fe Ry. Co.[1]	3	2			[illegible]		3		5		3	5	2				2									
Pennsylvania Lines West of Pittsburgh	177	45	182	12	153	7	46		32		29		13		2		5		5						5	
Pennsylvania R. R. Co.[2]	135	53	76	18	39	6	24	4	30	4	16	4	2		6				8							
Pere Marquette R. R. Co.	10	15	59	10	27	10	19	1	8				5						3				5			
Perkiomen R. R. Co.									27				1													
Philadelphia & Reading Ry. Co.	77	11	65		29		14		14				15		9		2		4		5		4		2	
Philadelphia, Baltimore & Washington R. R. Co.	11	8	18		4		4		6		6		2		12		8		2							
Pittsburgh & Lake Erie R. R. Co.	17	4	12		14		5								6											
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co.	63	51	39	11	18	5	5					5														
Pittsburg, Shawmut & Northern R. R. Co.	41	8	26		31	1	12		14		2		3													
Pontiac, Oxford & Northern R. R. Co.		2			2						6						11				2					
Rio Grande Southern R. R. Co.	14		12		19		11														1					
Rutland R. R. Co.		12			10				2						1											
St. Joseph & Grand Island Ry. Co.	14		32	[illegible]	7				6				2				3		6							
St. Louis & Hannibal Ry. Co.			23		3		16								6		5									
St. Louis & San Francisco R. R. Co.	88	71	80	33	60	18	47	10	40	5	10		6				3	1								
St. Louis, Brownsville & Mexico Ry. Co.	60	20	102	5	35		29	5			15		15		5		15					6	10			
St. Louis, Iron Mountain & Southern Ry. Co.	131	55	145	28	93	14	63	14	28		23	5	25	1			1		5		6		1			
St. Louis, San Francisco & Texas Ry. Co.			5				11		5		5		[illegible]		5											
St. Louis Southwestern Ry. Co.	18		19		8		18		6		6						6									
St. Louis Southwestern Ry. Co. of Texas	33	6	37	5	45	10	31		15		5		[illegible]		17		5				5					
San Antonio & Aransas Pass Ry. Co.	72	17	116	6	78	5	75		33	6	9		30		11				11						5	
San Antonio, Uvalde & Gulf R. R. Co.	30	4	35	7	29			5	3	5	15												3		2	3
San Pedro, Los Angeles & Salt Lake R. R. Co.	29		10		33		8																			

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE I.—*A summary of instances in which employees in train service were on duty more than 16 consecutive hours during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Inclusive periods of continuous service in hours.																									
	16 to 17		17 to 18		18 to 19		19 to 20		20 to 21		21 to 22		22 to 23		23 to 24		24 to 25		25 to 26		26 to 27		27 to 28		28 to 29	
Seaboard Air Line Ry. Co	166	62	158	65	95	27	48	7	24	11	45		26		15	5	7		12				5			
Seattle, Port Angeles & Western Ry. Co	10	5	4				5		1																	
South Dakota Central Ry. Co	5		2		5		5				9												5			
Southern Pacific Co. (Pacific System)	113	12	170	6	59		63	2	50	6	22		16		15		2		4		2		1			
Southern Ry. Co	137	98	176	64	113	5	82	6	54		39	11	12				5				5				5	
Southern Ry. Co. in Mississippi	5	5	6	10	22		13		6																	
Spokane, Portland & Seattle Ry. Co	4		11	6	2		6																			
Susquehanna & New York R. R. Co	25		12	5	6		12			7																
Tennessee Central R. R. Co	5	6	25	5	21		5		3										5				5			
Texas & New Orleans R. R. Co	25		23	14	6	7			9		8		11													
Texas Pacific Ry. Co	197	56	190	15	151	3	84	10	51		24		16						7		6		6			
Texas Mexican Ry. Co	5				10		10																			
Toledo & Ohio Central Ry. Co	35	7	42		24	7	30		28		16		3				7									
Toledo & Western R. R. Co	9	4																								
Toledo, Saginaw & Muskegon Ry. Co	5		5	5															5				5		2	
Tremont & Gulf R. R. Co	29	6	15	10	4																					
Trinity & Brazos Valley Ry. Co	8		17	3	8	3		5	2							5			5							
Union Pacific R. R. Co	34	43	37	19	46	12	13		3	5	8		1		4		4				2					
Vandalia R. R. Co	14	34	16	8		4	5		2																	
Vicksburg, Shreveport & Pacific Ry. Co	5		10								10								5							
Virginia & Southwestern Ry. Co		5	7		14		7		5																	
Virginian Ry. Co	36	3	32	9	27	7	29	9	5								7		2							
Wabash, Chester & Western R. R. Co	18																									
Wabash R. R. Co	448	621	269	134	121	16	74	12	27	10	32	4	6	2		1	9								5	
Washington & Old Dominion Ry. Co			6	6		6					6				7											
Western Pacific Ry. Co	42	5	55		51		21		25		15		5				12		5				12		5	
Western Ry. of Alabama	16	5	2								6															
West Jersey & Seashore R. R. Co	19	2	1		7		9				6															
Wichita Falls & Northwestern Ry. Co	26	13	16	5	26	7	5		14		9		10				15		9							
Wichita Valley Ry. Co	52		20		27		20		14		10		5		5		10		5							
Winchester-Salem Southbound Ry. Co	6		7				4		4										4							
Yazoo & Mississippi Valley R. R. Co	54	25	119	30	40	26	54		16	8	5		5	5	5								5			
Combined totals of all instances	17,268		15,527		9,285		5,599		3,399		2,363		1,554		1,003		863		595		355		288		266	

Name of railroad.	Inclusive periods of continuous service in hours.																										Total.	
	29 to 30		30 to 31		31 to 32		32 to 33		33 to 34		34 to 35		35 to 36		36 to 37		37 to 40		40 to 45		45 to 55		55 to 65		65 or more.			
Alabama Great Southern R. R. Co.																											15	
Alabama, Tennessee & Northern Ry. Co.		5					6																				139	23
Arizona & New Mexico Ry. Co.					11																						46	5
Arizona Eastern R. R. Co.																											12	6
Asherton & Gulf Ry. Co.							3												5								19	
Atchison, Topeka & Santa Fe Ry. Co.					5																						1,136	131
Atlanta, Birmingham & Atlantic R. R. Co.							5																				258	31
Atlantic & St. Lawrence Ry. Co.																											32	
Atlantic City R. R. Co.																											15	17
Atlantic Coast Line R. R. Co.																											476	42
Augusta Southern R. R. Co.																											70	6
Baltimore & Ohio Chicago Terminal R. R. Co.																											33	6
Baltimore & Ohio System	10																										5,606	1,385
Bangor & Aroostook R. R. Co.																											67	6
Bessemer & Lake Erie R. R. Co.																											64	
Boston & Albany R. R. Co.																											25	
Boston & Maine R. R. Co.																											263	35
Buffalo & Susquehanna R. R. Corporation																											22	
Buffalo, Rochester & Pittsburgh Ry. Co.																											75	8
Camas Prairie R. R. Co.																											6	
Canadian Pacific Ry. Co.																											37	8
Carolina & North Western Ry. Co.																											27	
Carolina, Atlantic & Western Ry. Co.																											5	
Carolina, Clinchfield & Ohio Ry. Co.																											153	6
Central Indiana Ry. Co.																											19	40
Central New England Ry. Co.																											34	
Central of Georgia Ry. Co.	5										4																245	78
Central R. R. Co. of New Jersey																											277	16
Central Vermont Ry. Co.																											138	17
Charleston & Western Carolina Ry. Co.																											38	
Chesapeake & Ohio Ry. Co.	2	5	27	5	25		5				3		2														3,508	348
Chesapeake & Ohio Ry. Co. of Indiana																											184	44
Chesterfield & Lancaster R. R. Co.			5																								26	5
Chicago & Alton R. R. Co.																											249	44
Chicago & Eastern Illinois R. R. Co.																											217	10
Chicago & Erie R. R. Co.																											97	39
Chicago & North Western Ry. Co.	5		3				3		6		2				6				12								583	77
Chicago, Burlington & Quincy R. R. Co.	14		5		14		5		7		2		2		9												1,493	350
Chicago Great Western R. R. Co.					5										2		4				4						195	46
Chicago, Indiana & Southern R. R. Co.																											70	18
Chicago, Indianapolis & Louisville Ry. Co.																											116	11
Chicago, Memphis & Gulf R. R. Co.																											20	6
Chicago, Milwaukee & St. Paul Ry. Co.									5		1		5				3	2	2		10		1	5	1	5	804	275
Chicago, Peoria & St. Louis Ry. Co. of Illinois																											88	18

Table I.—*A summary of instances in which employees in train service were on duty more than 16 consecutive hours during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Inclusive periods of continuous service in hours.																										Total.	
	29 to 30		30 to 31		31 to 32		32 to 33		33 to 34		34 to 35		35 to 36		36 to 37		37 to 40		40 to 45		45 to 55		55 to 65		65 or more.			
Chicago, Rock Island & Gulf Ry. Co.																											58	**34**
Chicago, Rock Island & Pacific Ry. Co.					5														5								527	**186**
Chicago, St. Paul, Minn. & Omaha Ry. Co.																											10	**5**
Chicago, Terre Haute & Southeastern Ry. Co.																											81	**6**
Cincinnati, Hamilton & Dayton Ry. Co.																											175	**27**
Cincinnati, Lebanon & Northern Ry. Co.																											25	
Cincinnati, New Orleans & Texas Pacific Ry. Co.																											33	
Cincinnati Northern R. R. Co.																											65	**31**
Cleveland, Cincinnati, Chicago & St. Louis Ry. Co.	5		6				5																				696	**128**
Coal & Coke Ry. Co.	5								5									5									961	**112**
Colorado & Southern Ry. Co.	2																										267	**64**
Colorado Midland Ry. Co.					2												7										254	**25**
Delaware & Hudson Co.																											152	**65**
Delaware, Lackawanna & Western R. R. Co.																											126	**36**
Denver & Rio Grande R. R. Co.											5																571	**39**
Denver & Salt Lake R. R. Co.			7		7		5										6		7		7						585	
Detroit & Mackinac Ry. Co.																											21	
Detroit & Toledo Shore Line R. R. Co.																											34	**5**
Detroit, Grand Haven & Milwaukee Ry. Co.																											12	**9**
Detroit, Toledo & Ironton Ry. Co.	5																				5						424	**48**
Duluth & Iron Range R. R. Co.																											48	**6**
Duluth, South Shore & Atlantic Ry. Co.			5				5																				60	**5**
Elgin, Joliet & Eastern Ry. Co.																											105	**40**
El Paso & Southwestern System					10																						152	**21**
Erie R. R. Co.																											436	**52**
Escanaba & Lake Superior R. R. Co.																											20	**5**
Florence & Cripple Creek R. R. Co.																											166	**17**
Florida East Coast Ry. Co.																											30	**12**
Fort Dodge, Des Moines & Southern R. R. Co.																	4										30	**4**
Fort Smith & Western R. R. Co.																											25	
Fort Worth & Denver City Ry. Co.					10		5		5		5								5		5				5		485	**9**
Fort Worth & Rio Grande Ry. Co.																											81	**11**
Gainesville & Northwestern R. R. Co.																											24	**5**
Galveston, Harrisburg & San Antonio Ry. Co.	5		5																								235	**35**
Georgia & Florida Ry. Co.													5														100	**11**
Georgia R. R.																											73	**16**
Georgia Southern & Florida Ry. Co.																											101	**19**
Grand Rapids & Indiana Ry. Co.																											20	**17**
Grand Trunk Western Ry. Co.																											189	**45**
Great Northern Ry. Co.																											356	**74**

Gulf & Ship Island R. R. Co																										92	30
Gulf, Colorado & Santa Fe Ry. Co																										587	121
Gulf, Texas & Western Ry. Co				5																						18	10
Hagerstown & Frederick Ry. Co																										60	
Hocking Valley R. R. Co																										12	67
Houston & Shreveport R. R. Co																										28	12
Houston & Texas Central R. R. Co	6																									134	23
Houston East & West Texas Ry. Co																										191	23
Illinois Central R. R. Co																										388	132
Illinois Southern Ry. Co																										20	14
Illinois Traction System																										23	2
Indiana Harbor Belt R. R. Co																										46	2
International & Great Northern Ry. Co																	5									468	64
Jonesboro, Lake City & Eastern R. R. Co																										30	10
Kanawha & Michigan Ry. Co																										11	16
Kansas City, Clinton & Springfield Ry. Co																										20	
Kansas City, Mexico & Orient Ry. Co	5																									249	
Kansas City, Mexico & Orient Ry. Co. of Texas	20	5	3	1	5		15	5	2	5	10									2						976	278
Kansas City Southern Ry. Co																										654	132
Lake Erie & Western R. R. Co																										45	
Lake Shore & Michigan Southern Ry. Co																										52	1
Lehigh & Hudson River Ry. Co																										34	
Lehigh Valley R. R. Co	4		4																							651	52
Long Island R. R. Co	3	1	4										3													360	45
Louisiana & Arkansas Ry. Co																										9	10
Louisiana & Northwest R. R. Co			4																							59	18
Louisiana Ry. & Navigation Co	4		6														10									511	63
Louisiana Western R. R. Co																										25	6
Louisville & Nashville R. R. Co																										660	56
Macon & Birmingham Ry. Co								5																		37	5
Maine Central R. R. Co																										15	10
Marshall & East Texas Ry. Co	4		5		5																					159	20
Maryland & Pennsylvania R. R. Co																										155	6
Michigan Central R. R. Co																										82	33
Midland Valley R. R. Co																										32	10
Milford, Attleboro & Woonsocket Street Ry. Co																										19	
Minneapolis & St. Louis R. R. Co			2		14				4																	477	80
Minneapolis, St. Paul & Sault Ste. Marie Ry. Co	5																									231	134
Minneapolis, St. Paul, Roch. & D. Elec. Trac. Co																										131	22
Mississippi Central R. R. Co																										20	7
Missouri & North Arkansas R. R. Co																										114	31
Missouri, Kansas & Texas Ry. Co																										1,162	385
Missouri, Kansas & Texas Ry. Co. of Texas	10																									885	239
Missouri, Oklahoma & Gulf Ry. Co																										422	59
Missouri Pacific Ry. Co	2		13		3												3									1,284	256
Mobile & Ohio R. R. Co																										210	23
Morgan's Louisiana & Texas R. R. & S. S. Co					2										3				2							114	1
Nashville, Chattanooga & St. Louis Ry. Co																										183	23
Nevada-California-Oregon Ry. Co																										82	15
New Iberia & Northern R. R. Co																										28	
New Mexico Central R. R. Co	2																									22	
New Orleans & Northeastern R. R. Co																										41	
New Orleans Great Northern R. R. Co																										57	37

Table I.—*A summary of instances in which employees in train service were on duty more than 16 consecutive hours during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Inclusive periods of continuous service in hours.																										Total.	
	29 to 30		30 to 31		31 to 32		32 to 33		33 to 34		34 to 35		35 to 36		36 to 37		37 to 40		40 to 45		45 to 55		55 to 65		65 or more.			
New Orleans, Texas & Mexico R. R. Co.																											31	
New York Central R. R. Co.																											81	21
New York, Chicago & St. Louis R. R. Co.																											44	12
New York, New Haven & Hartford R. R. Co.																											30	
New York, Ontario & Western Ry. Co.																											16	10
New York, Susquehanna & Western R. R. Co.																											16	
Norfolk & Western Ry. Co.			3		4		8		2																		1,063	83
Norfolk Southern R. R. Co.																											79	21
Northern Pacific Ry. Co.							5																				768	241
Northwestern Pacific R. R. Co.																											86	
Norwich & Westerly Traction Co.																											14	
Ohio River & Western Ry. Co.			8			10																					32	19
Orange & Northwestern R. R. Co.																											45	
Oregon Short Line R. R. Co.																											46	24
Oregon-Washington R. R. & Navigation Co.																											148	11
Pacific Electric Ry. Co.																											10	
Pacific Ry. & Navigation Co.	6																										23	
Panhandle & Santa Fe Ry. Co.[1]																											20	7
Pennsylvania Lines West of Pittsburgh																											649	64
Pennsylvania R. R. Co.[2]							4																				340	89
Pere Marquette R. R. Co.						5					5	5	5														148	46
Perkiomen R. R. Co.																											28	
Philadelphia & Reading Ry. Co.					3														4								252	17
Philadelphia, Baltimore & Washington R. R. Co.																											73	8
Pittsburgh & Lake Erie R. R. Co.																											61	4
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co.																											125	72
Pittsburg, Shawmut & Northern R. R. Co.																											129	9
Pontiac, Oxford & Northern R. R. Co.							2												2								25	2
Rio Grande Southern R. R. Co.	3																										60	
Rutland R. R. Co.																											13	12
St. Joseph & Grand Island Ry. Co.	4				5		2								3				4		12		10		2		112	2
St. Louis & Hannibal Ry. Co.											6																60	
St. Louis & San Francisco R. R. Co.	5																										339	138
St. Louis, Brownsville & Mexico Ry. Co.																											286	36
St. Louis, Iron Mountain & Southern Ry. Co.			6																								527	117
St. Louis, San Francisco & Texas Ry. Co.																											36	
St. Louis Southwestern Ry. Co.																											81	
St. Louis Southwestern Ry. Co. of Texas																	15										213	21
San Antonio & Aransas Pass Ry. Co.					4										5												449	34

San Antonio, Uvalde & Gulf R. R. Co.														124	24
San Pedro, Los Angeles & Salt Lake R. R. Co.		1												81	
Seaboard Air Line Ry. Co.		5										5		611	177
Seattle, Port Angeles & Western Ry. Co.														20	5
South Dakota Central Ry. Co.														31	
Southern Pacific Co. (Pacific System)										2				517	28
Southern Ry. Co.														628	184
Southern Ry. Co. in Mississippi														52	15
Spokane, Portland & Seattle Ry. Co.														23	6
Susquehanna & New York R. R. Co.														55	12
Tennessee Central R. R. Co.														69	11
Texas & New Orleans R. R. Co.														87	21
Texas Pacific Ry. Co.	2	4												738	84
Texas Mexican Ry. Co.							5		5					35	
Toledo & Ohio Central Ry. Co.														185	15
Toledo & Western R. R. Co.														9	4
Toledo, Saginaw & Muskegon Ry. Co.			7											29	5
Tremont & Gulf R. R. Co.														48	16
Trinity & Brazos Valley Ry. Co.														41	16
Union Pacific R. R. Co.				5				4						161	79
Vandalia R. R. Co.														37	46
Vicksburg, Shreveport & Pacific Ry. Co.														30	
Virginia & Southwestern Ry. Co.														33	5
Virginian Ry. Co.	5													143	28
Wabash, Chester & Western R. R. Co.														18	
Wabash R. R. Co.														991	800
Washington & Old Dominion Ry. Co.														19	12
Western Pacific Ry. Co.	3	5	5						3	2				266	5
Western Ry. of Alabama														24	5
West Jersey & Seashore R. R. Co.			5											47	2
Wichita Falls & Northwestern Ry. Co.														130	25
Wichita Valley Ry. Co.		5	8		11				3					195	
Winchester-Salem Southbound Ry. Co.														25	
Yazoo & Mississippi Valley R. R. Co.							5							303	105
Combined totals of all instances	167	156	180	122	52	48	32	35	75	59	43	21	18	59,373	

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by Table I.*

[NOTE.—The items shown below in roman figures (exclusive of combined totals) refer to instances of excess service attributable to delays directly affecting the trains on which the men in question were respectively employed. The instances in heavy figures refer to causes of delays immediately affecting other trains in relation with which such trains may have been running at the time. Where several delays have been reported by a carrier as responsible for a single instance of excess service the cause of the latest delay but for the occurrence of which the given run might have been completed within the statutory period has been considered as the primary cause of such excess service.]

Name of railroad.	Engine delays.												Collisions.		Derailments.		Track defects and obstructions not resulting in collisions or derailments.		Landslides, high water, and fire.		Adverse weather conditions.	
	Taking or running for water.		Cleaning fires.		Miscellaneous mechanical defects.		Engine not steaming.															
							Poor coal.		Bad water.		Leaking.											
Alabama Great Southern R. R. Co.																**9**						
Alabama, Tennessee & Northern Ry. Co.	5				12								6		92	**23**	18					
Arizona & New Mexico Ry. Co.															14	**11**	26					
Arizona Eastern R. R. Co.					6												2					
Asherton & Gulf Ry. Co.															14	**5**						
Atchison, Topeka & Santa Fe Ry. Co.	10				123	**67**			5		27		18	**21**	289	**209**	53	**5**	61		25	**5**
Atlanta, Birmingham & Atlantic R. R. Co.					5						5		5		82	**92**			20			
Atlantic & St. Lawrence Ry. Co.						**10**	5								5							
Atlantic City R. R. Co.															1						26	
Atlantic Coast Line R. R. Co.					28						5		24	**5**	126	**185**	11		5		5	
Augusta Southern R. R. Co.					11								3	**1**	39	**17**						
Baltimore & Ohio Chicago Terminal R. R. Co.															15	**16**						
Baltimore & Ohio System	210	**16**	20	**2**	320	**267**	17	**9**	6	**2**	179	**152**	47	**94**	393	**621**	40	**11**	58	**22**	108	**36**
Bangor & Aroostook R. R. Co.					13								6		16	**10**						
Bessemer & Lake Erie R. R. Co.						**6**									12	**33**						
Boston & Albany R. R. Co.															2	**3**						
Boston & Maine R. R. Co.					1									**17**	34	**112**	3		5		8	
Buffalo & Susquehanna R. R. Corporation															15	**2**					5	
Buffalo, Rochester & Pittsburgh Ry. Co.													6	**12**	13	**18**						
Camas Prairie R. R. Co.																			6			
Canadian Pacific Ry. Co.	4		8													**5**						
Carolina & North Western Ry. Co.															22	**5**						
Carolina, Atlantic & Western Ry. Co																						
Carolina, Clinchfield & Ohio Ry. Co.												**2**	5		75	**27**	14		19			
Central Indiana Ry. Co.					20										10	**4**						
Central New England Ry. Co.													2		8	**18**						
Central of Georgia Ry. Co.					43						4		5		125	**63**			9			
Central R. R. Co. of New Jersey														**5**	30	**104**	12				21	
Central Vermont Ry. Co.					5						1		5	**5**	42	**70**	9					
Charleston & Western Carolina Ry. Co.															18	**15**						

Chesapeake & Ohio Ry. Co.	5	7			152	104					15	42		51	724	1,065	71		104		30	
Chesapeake & Ohio Ry. Co. of Indiana						7									33	91	5					
Chesterfield & Lancaster R. R. Co.					5										16		5					
Chicago & Alton R. R. Co.											5			13	61	115	20				10	
Chicago & Eastern Illinois R. R. Co.					5	16								7	17	100				10		
Chicago & Erie R. R. Co.															44	10					6	
Chicago & North Western Ry. Co.	2				15	1								5	61	60	83		5		307	14
Chicago, Burlington & Quincy R. R. Co.	3				62	22					21		34	35	76	93	216	5	94		221	49
Chicago Great Western R. R. Co.															46	34	22		15		75	9
Chicago, Indiana & Southern R. R. Co.					13	6					5				23	8				1		
Chicago, Indianapolis & Louisville Ry. Co.					5	5									26	17	5					
Chicago, Memphis & Gulf R. R. Co.													6			20						
Chicago, Milwaukee & St. Paul Ry. Co.	3				71						3		8		200	192	53		48		192	35
Chicago, Peoria & St. Louis Ry. Co. of Illinois					8								8		28	31	13		5			
Chicago, Rock Island & Gulf Ry. Co.															40	22			3			
Chicago, Rock Island & Pacific Ry. Co.		2			53				5		4			19	18	91	32		58	5	101	41
Chicago, St. Paul, Minneapolis & Omaha Ry. Co.																5					10	
Chicago, Terra Haute & Southeastern Ry. Co.						7					2				13	7						5
Cincinnati, Hamilton & Dayton Ry. Co.											5				20	48	15	5	5			
Cincinnati, Lebanon & Northern Ry. Co.					10											5			5			
Cincinnati, New Orleans & Texas Pacific Ry. Co.					5										10	13						
Cincinnati Northern R. R. Co.					12										26	10	6				5	
Cleveland, Cincinnati, Chicago & St. Louis Ry. Co.					36						5		10	20	170	177					20	
Cole & Coke Ry. Co.					77	7					6		17	12	467	296	10		24			
Colorado & Southern Ry. Co.					39	5			5						59	92	5		54	5	22	
Colorado Midland Ry. Co.													5		99	106	39		15			
Delaware & Hudson Co.					3	18									42	42	14		27			
Delaware, Lackawanna & Western R. R. Co.															10	45					68	
Denver & Rio Grande R. R. Co.						20							14		108	82	38		130		40	15
Denver & Salt Lake R. R. Co.					31									10	139	141	15		77		92	
Detroit & Mackinac Ry. Co.													10			6						
Detroit & Toledo Shore Line R. R. Co.															10	19						
Detroit, Grand Haven & Milwaukee Ry. Co.															1							
Detroit, Toledo & Ironton Ry. Co.					10	5							3	15	72	144	14	6	12		6	
Duluth & Iron Range R. R. Co.															36	5						
Duluth, South Shore & Atlantic Ry. Co.					3										21	26					5	
Elgin, Joliet & Eastern Ry. Co.					7										47	35						
El Paso & Southwestern System					5										38	33	15		25			
Erie R. R. Co.					39	25							22	21	64	61			36		1	7
Escanaba & Lake Superior R. R. Co.					5										10	5			5			
Florence & Cripple Creek R. R. Co.					24	5									65	15	10		29		4	
Florida East Coast Ry. Co.									6						6	3						
Fort Dodge, Des Moines & Southern R. R. Co.						5										2					24	
Fort Smith & Western R. R. Co.					10											5						
Fort Worth & Denver City Ry. Co.	3	[illegible]			13	2	4						5		152	141	148				3	
Fort Worth & Rio Grande Ry. Co.															45	36	5					
Gainesville & Northwestern R. R. Co.					5										19							
Galveston, Harrisburg & San Antonio Ry. Co.					16	5					8		5		81	41	40		25			
Georgia & Florida Ry. Co.															55	40						
Georgia Railroad					13										25	33			5			
Georgia Southern & Florida Ry. Co.					6								7	12	33	23	7		8			
Grand Rapids & Indiana Ry. Co.	5				5														11		1	

Table II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by Table I*—Continued.

Name of railroad.	Engine delays.												Collisions.		Derailments.		Track defects and obstructions not resulting in collisions or derailments.		Landslides, high water, and fire.		Adverse weather conditions.	
	Taking or running for water.		Cleaning fires.		Miscellaneous mechanical defects.		Engine not steaming.															
							Poor coal.		Bad water.		Leaking.											
	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Grand Trunk & Western Ry. Co.	6	**7**			9										13	**15**						
Great Northern Ry. Co.	2				15						6		15		109	**42**	7		79		17	
Gulf & Ship Island R. R. Co.					10										78	**6**	6		5			
Gulf, Colorado & Santa Fe Ry. Co.	1				46	**10**					13				280	**203**	31		5			
Gulf, Texas & Western Ry. Co.															13				5			
Hagerstown & Frederick Ry. Co.															1						1	
Hocking Valley Ry. Co.					5										11							
Houston & Shreveport R. R. Co.															28	**6**						
Houston & Texas Central R. R. Co.	4				6										58	**43**	12		5			
Houston, East & West Texas Ry. Co.															89	**68**	6		12			
Illinois Central R. R. Co.	10	**19**			5								17	**33**	93	**98**	6		32		17	**4**
Illinois Southern Ry. Co.											5		5		8	**4**						
Illinois Traction System																					11	
Indiana Harbor Belt R. R. Co.													5	**5**	10	**10**	2					
International & Great Northern Ry. Co.	3				15						5				237	**83**	81		20			
Jonesboro, Lake City & Eastern R. R. Co.															35							
Kanawha & Michigan Ry. Co.													5			**4**						
Kansas City, Clinton & Springfield Ry. Co.															5				15			
Kansas City, Mexico & Orient Ry. Co.						**5**									61	**60**	86					
Kansas City, Mexico & Orient Ry. Co. of Texas	25				44	**10**					25				659	**269**	15		19		12	
Kansas City Southern Ry. Co.	3				9						5		5	**11**	235	**150**	75		13			
Lake Erie & Western R. R. Co.					1											**19**					5	
Lake Shore & Michigan Southern Ry. Co.						**4**															7	
Lehigh & Hudson River Ry. Co					2										6	**6**		**6**			6	
Lehigh Valley R. R. Co.					37	**63**							6	**27**	224	**220**	9		6		8	
Long Island R. R. Co.					7	**5**					9	**7**	11	**6**	67	**91**			9		154	
Louisiana & Arkansas Ry. Co.													4			**5**						
Louisiana & Northwest R. R. Co.															47	**12**						
Louisiana Railway & Navigation Co.					10						4	**6**			288	**137**	3		16			
Louisiana Western R. R. Co.					5						2				7							
Louisville & Nashville R. R. Co.					32	**3**					6		25	**28**	123	**218**	25		29		5	
Macon & Birmingham Ry. Co.					6									**5**	17	**14**						
Maine Central R. R. Co.	2																		1			
Marshall & East Texas Ry. Co.	4				6		5								98	**12**	5					
Maryland & Pennsylvania Ry. Co.					30										72	**13**	11					

Michigan Central R. R. Co.					12								5	2	31	20						
Midland Valley R. R. Co.															21	6	10					
Milford, Attleboro & Woonsocket Street Ry. Co.																					19	
Minneapolis & St. Louis R. R. Co.	18				15	20					8		15	7	85	147	5		6		138	14
Minneapolis, St. Paul & Sault Ste. Marie Ry. Co.	6				23								28	5	81	75	10		5		24	
Minneapolis, St. Paul, Rochester & D. Electric Traction Co.	5										12			5	18	23					8	
Mississippi Central R. R. Co.															11	3	4					
Missouri & North Arkansas R. R. Co.					6								6		80	38			6			
Missouri, Kansas & Texas Ry. Co.	25	5	10		29	15			10		15		15	55	313	471	40		18		19	
Missouri, Kansas & Texas Ry. Co. of Texas	21				11						38		6		370	392	84		43		5	
Missouri, Oklahoma & Gulf Ry. Co.					1	5	5							6	189	124	27		5			
Missouri Pacific Ry. Co.	6	6			57	35	8	5			20		15	22	230	297	139	13	144	5	103	
Mobile & Ohio R. R. Co.	7				6	4									50	118						
Morgan's Louisiana & Texas R. R. & S. S. Co.															45	45			6			
Nashville, Chattanooga & St. Louis Ry. Co.					30	5							11	6	40	67			5		10	
Nevada-California-Oregon Ry. Co.					19								4		39	33	2					
New Iberia & Northern R. R. Co.															26	2						
New Mexico Central R. R. Co.																					16	
New Orleans & Northeastern R. R. Co.															2	27						
New Orleans & Great Northern R. R. Co.		6				5									16	17			15			
New Orleans, Texas & Mexico R. R. Co.															17	14						
New York Central R. R. Co.					7								2	12		15	2				35	2
New York, Chicago & St. Louis R. R. Co.					2		5						6								6	6
New York, New Haven & Hartford R. R. Co.															8	9			2			
New York, Ontario & Western R. R. Co.					6										6		6	2				
New York, Susquehanna & Western R. R. Co.											10											
Norfolk & Western Ry. Co.					192	133					10		14	93	55	148	5		5		55	13
Norfolk Southern R. R. Co.	5														40	1			14		5	
Northern Pacific Ry. Co.					33	6					6		26	15	409	139	46	5	10		3	
Northwestern Pacific R. R. Co.															19	26			40			
Norwich & Westerly Traction Co.																						
Ohio River & Western Ry. Co.															14	18						
Orange & Northwestern R. R. Co.															40							
Oregon Short Line R. R. Co.											2		13		5	9			19			
Oregon-Washington Railroad & Navigation Co.	3												6		9	39	21		31			
Pacific Electric Ry. Co.																2						
Pacific Railway & Navigation Co.															6		6		11			
Panhandle & Sante Fe Ry. Co.[1]					9								3		5	10						
Pennsylvania Lines West of Pittsburgh	5				26	23		6					20	5	127	163	69		6		37	
Pennsylvania R. R. Co.[2]					12	46	2				4		8		36	54					18	30
Pere Marquette R. R. Co.					18								5		69	40					47	
Perkiomen R. R. Co.																						
Philadelphia & Reading Ry. Co.					23	2								17	22	93	6		5		5	5
Philadelphia, Baltimore & Washington R. R. Co.					4								2	6	6	5	10					
Pittsburgh & Lake Erie R. R. Co.					4								3	15	4	12						
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co.					28							6	6	30	43	5					4	
Pittsburgh, Shawmut & Northern R. R. Co.					6	2					6				44	20			8		8	
Pontiac, Oxford & Northern R. R. Co.						2									2	8					2	
Rio Grande Southern R. R. Co.															12	8					20	

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

Table II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by Table I*—Continued.

Name of railroad.	Engine delays.												Collisions.		Derailments.		Track defects and obstructions not resulting in collisions or derailments.		Land-slides, high water, and fire.		Adverse weather conditions.	
	Taking or running for water.		Cleaning fires.		Miscellaneous mechanical defects.		Engine not steaming.															
							Poor coal.		Bad water.		Leaking.											
Rutland R. R. Co.					2										5	**1**			5		6	
St. Joseph & Grand Island Ry. Co.						**1**					6				5		22		5		67	**6**
St. Louis & Hannibal Ry. Co.															25	**22**			7			
St. Louis & San Francisco R. R. Co.					29	**6**					5		5		96	**86**	43	**5**	56		12	
St. Louis, Brownsville & Mexico Ry. Co.					5	**15**							5		134	**65**	25		13			
St. Louis, Iron Mountain & Southern Ry. Co.	10				17	**5**		**6**			10		8	**12**	150	**195**	26		37	**5**	24	
St. Louis, San Francisco & Texas Ry. Co.															16	**20**						
St. Louis Southwestern Ry. Co.																**20**			6	**5**		
St. Louis Southwestern Ry. Co. of Texas					5						5				84	**84**	19	**5**	11			
San Antonio & Aransas Pass Ry. Co.					21	**5**					5				194	**149**	16		27			
San Antonio, Uvalde & Gulf R. R. Co.	1				12										89	**5**	23		5			
San Pedro, Los Angeles & Salt Lake R. R. Co.					15						15				27	**3**	5		5			
Seaboard Air Line Ry. Co.	6				60	**15**					15		12	**24**	152	**205**	17				13	
Seattle, Port Angeles & Western Ry. Co.															5		14					
South Dakota Central Ry. Co.					5	**2**					5				4	**5**					10	
Southern Pacific Co. (Pacific System)					25	**6**					4		17		139	**71**	8		80		22	
Southern Ry. Co.	7				38								5	**8**	260	**108**	26		50		7	
Southern Ry. Co. in Mississippi					15										42	**5**			5			
Spokane, Portland & Seattle Ry. Co.																	5		20			
Susquehanna & New York R. R. Co.					6	**8**									18	**17**						
Tennessee Central R. R. Co.														**10**	23	**30**			6			
Texas & New Orlenas R. R. Co.					12	**3**									38	**29**			8			
Texas & Pacific Ry. Co.					10	**3**					34		16	**26**	225	**208**	69		42		6	
Texas Mexican Ry. Co.															15				15			
Toledo & Ohio Central Ry. Co.													7	**10**	20	**38**			15		1	
Toledo & Western R. R. Co.																					7	
Toledo, Saginaw & Muskegon Ry. Co.															2	**22**						
Tremont & Gulf R. R. Co.															48		5					
Trinity & Brazos Valley Ry. Co.															31		10		6			
Union Pacific R. R. Co.	6											**5**		**10**	19	**24**	42		10		66	**10**
Vandalia R. R. Co.	5				2								12		16	**5**	17					
Vicksburg, Shreveport & Pacific Ry. Co.					5									**5**		**20**						
Virginia & Southwestern Ry. Co.															19				7			
Virginian Ry. Co.					18								5	**9**	36	**41**			31		7	

Wabash, Chester & Western R. R. Co.															13							
Wabash R. R. Co.	69				43	**10**	5		5		9		15		269	**205**	121	**5**	56		37	**5**
Washington & Old Dominion Ry. Co.															18							
Western Pacific Ry. Co.					5									**3**	38	**60**			129		5	
Western Railway of Alabama					6										16							
West Jersey & Seashore R. R. Co.														**2**							37	**6**
Wichita Falls & Northwestern Ry. Co.					5		5				5				59	**65**					5	
Wichita Valley Ry. Co.					37	**5**	5		5		6				62	**50**	10					
Winston-Salem Southbound Ry. Co.															7	**18**						
Yazoo & Mississippi Valley R. R. Co.						**15**							20	**10**	96	**122**	5			**5**	5	
Combined totals of all instances	608		40		3,779		95		49		882		1,703		25,209		2,567		2,407		2,929	

TABLE II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by Table I*—Continued.

Name of railroad.	Congestion of traffic.		Station work, waiting for orders, and meeting trains.		Wire troubles.		Air troubles.		Hot boxes.		Coupler and drawbar defects.		Miscellaneous car defects.		Sickness, death, and personal injury.		Miscellaneous causes not otherwise specified.		Totals.		Combined total.
Alabama Great Southern R. R. Co.					6														6	9	15
Alabama, Tennessee & Northenr Ry. Co.	6																		139	23	162
Arizona & New Mexico Ry. Co.																			40	11	51
Arizona Eastern R. R. Co.											6						4		18		18
Asherton & Gulf Ry. Co.																			14	5	19
Atchison, Topeka & Santa Fe Ry. Co.			5		5		38		15		54	21	95	91	10		15		848	419	1,267
Atlanta, Birmingham & Atlantic R. R. Co.							6	5			5		53	11					181	108	289
Atlantic & St. Lawrence Ry. Co.			12																22	10	32
Atlantic City R. R. Co.																	5		32		32
Atlantic Coast Line R. R. Co.	10		1		5		3				33	7	22	32			6	5	284	234	518
Augusta Southern R. R. Co.									5										58	18	76
Baltimore & Ohio Chicago Terminal R. R. Co.	2	2									2						2		21	18	39
Baltimore & Ohio System	171	21	1,062	17	7		195	64	57	8	850	565	328	835	18		155	8	4,241	2,750	6,991
Bangor & Aroostook R. R. Co.													10	12				6	45	28	73
Bessemer & Lake Erie R. R. Co.																	13		25	39	64
Boston & Albany R. R. Co.														20					2	23	25
Boston & Maine R. R. Co.	8	6						7	8		16	41	18	10	1		3		105	193	298
Buffalo & Susquehanna R. R. Corporation																			20	2	22
Buffalo, Rochester & Pittsburgh Ry. Co.											10		18	6					47	36	83
Camas Prairie R. R. Co.																			6		6
Canadian Pacific Ry. Co.	10		10	5			3												35	10	45
Carolina & North Western Ry. Co.																			22	5	27
Carolina, Atlantic & Western Ry. Co.									5										5		5
Carolina, Clinchfield & Ohio Ry. Co.											10		7						130	29	159
Central Indiana Ry. Co.			15	5									5						50	9	59
Central New England Ry. Co.																	6		16	18	34
Central of Georgia Ry. Co.	15		5				5				28		5				16		260	63	323
Central R. R. Co. of New Jersey												6	18	97					81	212	293
Central Vermont Ry. Co.													5	6			7		74	81	155
Charleston & Western Carolina Ry. Co.														5					18	20	38
Chesapeake & Ohio Ry. Co.		6	5				27	35	5		406	186	264	525			20		1,835	2,021	3,856
Chesapeake & Ohio Ry. Co. of Indiana							7	6				7	48	24					93	135	228
Chesterfield & Lancaster R. R. Co.																	5		31		31
Chicago & Alton R. R. Co.	39										4		20	5					160	133	293
Chicago & Eastern Illinois R. R. Co.													52	10				5	79	148	227
Chicago & Erie R. R. Co.	6										6	6	20	29			6		91	45	136
Chicago & North Western Ry. Co.	13		25	5	6		1		2		11	5	16		1		17		570	90	660
Chicago, Burlington & Quincy R. R. Co.							20	5	16	3	364	60	161	143	6		20		1,414	429	1,843
Chicago Great Western R. R. Co.	9		6						6		8		5				6		198	43	241
Chicago, Indiana & Southern R. R. Co.											6	10	11	5					58	30	88

Nashville, Chattanooga & St. Louis Ry. Co.											12		11	5					123	83	206
Nevada-California-Oregon Ry. Co.																			64	33	97
New Iberia & Northern R. R. Co.																			26	2	28
New Mexico Central R. R. Co.																	6		22		22
New Orleans & Northeastern R. R. Co.														12					2	39	41
New Orleans Great Northern R. R. Co.	8										6		5		4		12		66	28	94
New Orleans, Texas & Mexico R. R. Co.																			17	14	31
New York Central R. R. Co.			2											15	7				58	44	102
New York, Chicago & St. Louis R. R. Co.														15			9		28	28	56
New York, New Haven & Hartford R. R. Co.											6						5		21	9	30
New York, Ontario & Western R. R. Co.																			24	2	26
New York, Susquehanna & Western R. R. Co.													6						16		16
Norfolk & Western Ry. Co.							10				175	36	52	140	5		5		583	563	1,146
Norfolk Southern R. R. Co.													25				5		99	1	100
Northern Pacific Ry. Co.	15		9				28	8	6		113		84	22			20		808	201	1,009
Northwestern Pacific R. R. Co.																	1		60	26	86
Norwich & Westerly Traction Co.																	14		14		14
Ohio River & Western Ry. Co.	5		10										4						33	18	51
Orange & Northwestern R. R. Co.													5						45		45
Oregon Short Line R. R. Co.											5		10		5		2		61	9	70
Oregon-Washington Railroad & Navigation Co.											11		11	16					93	66	159
Pacific Electric Ry. Co.																			8	2	10
Pacific Railway & Navigation Co.																			23		23
Panhandle & Santa Fe Ry. Co.[1]																			17	10	27
Pennsylvania Lines West of Pittsburgh	15		49		39		10		7		17	33	25	28			3		455	258	713
Pennsylvania R. R. Co.[2]	18						9	14			34	48	48	26			18		211	218	429
Pere Marquette R. R. Co.											10		5						154	40	194
Perkiomen R. R. Co.													6	22					6	22	28
Philadelphia & Reading Ry. Co.	2						2	6					20	60					86	183	269
Philadelphia, Baltimore & Washington R. R. Co.													6	38					32	49	81
Pittsburgh & Lake Erie R. R. Co.														21			6		17	48	65
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co.	19		20								16		3	6			11		150	47	197
Pittsburgh, Shawmut & Northern R. R. Co.											14		30						116	22	138
Pontiac, Oxford & Northern R. R. Co.			2										11						17	10	27
Rio Grande Southern R. R. Co.											9		9	2					50	10	60
Rutland R. R. Co.												6							18	7	25
St. Joseph & Grand Island Ry. Co.																			107	7	114
St. Louis & Hannibal Ry. Co.													6						38	22	60
St. Louis & San Francisco R. R. Co.	17						5		8		23	16	27	5			33		359	118	477
St. Louis, Brownsville & Mexico Ry. Co.				5							30	5	10	10					222	100	322
St. Louis, Iron Mountain & Southern Ry. Co.	12		6				7		13		8		52	17	1		23		404	240	644
St. Louis, San Fancisco & Texas Ry. Co.																			16	20	36
St. Louis Southwestern Ry. Co.			6		6		6				6		18	5			3		51	30	81
St. Louis Southwestern Ry. Co. of Texas			6											10			5		135	99	234
San Antonio & Aransas Pass Ry. Co.	6		12										26		5		11		323	160	483
San Antonio, Uvalde & Gulf R. R. Co.			6								5						2		143	5	148
San Pedro, Los Angeles & Salt Lake R. R. Co.														11					67	14	81
Seaboard Air Line Ry. Co.	33		18	3			12	5			75	27	69		5		17		504	284	788
Seattle, Port Angeles & Western Ry. Co.													5						25		25
South Dakota Central Ry. Co.																			24	7	31
Southern Pacific Co. (Pacific System)							8				49		84	31	1				437	108	545

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by* [illegible]

Name of railroad.	Congestion of traffic.		Station work, waiting for orders, and meeting trains.		Wire troubles.		Air troubles.		Hot boxes.		Coupler and drawbar defects.		Miscellaneous car defects.		Sickness, death, and personal injury.		Miscellaneous causes not otherwise specified.		Totals.		Combined total.
Illinois Central R. R. Co.				1			16				30		41	87	1		10		278	242	520
Illinois Southern Ry. Co.											11						1		30	1	34
Illinois Traction System					10												4		25		25
Indiana Harbor Belt R. R. Co.	2										5			5			4		28	20	48
International & Great Northern Ry. Co.			25				10	5					13	10			25		434	98	532
Jonesboro, Lake City & Eastern R. R. Co.																	5		40		40
Kanawha & Michigan Ry. Co.													7	2			9		21	6	27
Kansas City, Clinton & Springfield Ry. Co.																			20		20
Kansas City, Mexico & Orient Ry. Co.			16								4		10	7					177	72	249
Kansas City, Mexico & Orient Ry. Co. of Texas	10		10						15		15		55	10	1		60		965	289	1,254
Kansas City Southern Ry. Co.	22		121								20		71	38	5		3		587	199	786
Lake Erie & Western R. R. Co.													15	5					21	24	45
Lake Shore & Michigan Southern Ry. Co.							5				9	5	13	9	1				35	18	53
Lehigh & Hudson River Ry. Co.												2		6				1	14	21	35
Lehigh Valley R. R. Co.											12	6	12	69			4		318	385	703
Long Island R. R. Co.	2		1				7				9		9		4		7		296	109	405
Louisiana & Arkansas Ry. Co.			5								5								14	5	19
Louisiana & Northwest R. R. Co.			6														12		65	12	77
Louisiana Railway & Navigation Co.	5											5	34	7	3		56		419	155	574
Louisiana Western R. R. Co.							12						5						31		31
Louisville & Nashville R. R. Co.	6		1				6		5		51	12	57	71			13		384	332	716
Macon & Birmingham Ry. Co.																			23	19	42
Maine Central R. R. Co.			19						3										25		25
Marshall & East Texas Ry. Co.			24								5						20		167	12	179
Maryland & Pennsylvania Ry. Co.	12								6				11				6		148	13	161
Michigan Central R. R. Co.							5		2		10		23	5					88	27	115
Midland Valley R. R. Co.									5										36	6	42
Milford, Attleboro & Woonsocket Street Ry. Co.																			19		19
Minneapolis & St. Louis R. R. Co.			35	5	5								8	10			16		354	203	557
Minneapolis, St. Paul & Sault Ste. Marie Ry. Co.	5		5	2			6				13		60	12			5		271	94	365
Minneapolis, St. Paul, Rochester & D. Electric Traction Co.	14		1										15				52		125	28	153
Mississippi Central R. R. Co.											5						4		24	3	27
Missouri & North Arkansas R. R. Co.											6						3		107	38	145
Missouri, Kansas & Texas Ry. Co.	169		51	1							29	5	95	92	3		62		903	644	1,547
[illegible] & Texas Ry. Co. of Texas	23		12				10				36	18	25	25			5		689	435	1,124
[illegible] Co.												5	50	49	6		9		292	189	481
[illegible]	21		19				8				148	25	79	83			52		1,049	491	1,540
[illegible]			5						2		8		14	14			2		97	136	233
[illegible]													6	12			1		58	57	115

Nashville, Chattanooga & St. Louis Ry. Co.								12	....	11	5			123	83	206
Nevada-California-Oregon Ry. Co.														64	33	97
New Iberia & Northern R. R. Co.														26	2	28
New Mexico Central R. R. Co.														22		22
New Orleans & Northeastern R. R. Co.											12			2	39	41
New Orleans Great Northern R. R. Co.	8							6		5		4	12	66	28	94
New Orleans, Texas & Mexico R. R. Co.														17	14	31
New York Central R. R. Co.		2									15	7		58	44	102
New York, Chicago & St. Louis R. R. Co.									5		15		9	28	28	56
New York, New Haven & Hartford R. R. Co.								6					5	21	9	30
New York, Ontario & Western R. R. Co.														24	2	26
New York, Susquehanna & Western R. R. Co.										6				16		16
Norfolk & Western Ry. Co.					10			175	36	52	140		5	583	563	1,146
Norfolk Southern R. R. Co.								5		25			5	99	1	100
Northern Pacific Ry. Co.	15	9			28	8	6	113	6	84	22		20	808	201	1,009
Northwestern Pacific R. R. Co.														60	26	86
Norwich & Westerly Traction Co.													14	14		14
Ohio River & Western Ry. Co.	5	10								4				33	18	51
Orange & Northwestern R. R. Co.										5				45		45
Oregon Short Line R. R. Co.								5		10		5	2	61	9	70
Oregon-Washington Railroad & Navigation Co.								11	5	11	16		1	93	66	159
Pacific Electric Ry. Co.													7	8	2	10
Pacific Railway & Navigation Co.														23		23
Panhandle & Santa Fe Ry. Co.[1]														17	10	27
Pennsylvania Lines West of Pittsburgh	15	49		39	10		7	17	33	25	28		3	455	258	713
Pennsylvania R. R. Co.[2]	18	4			9	14		34	48	48	26		18	211	218	429
Pere Marquette R. R. Co.								10		5				154	40	194
Perkiomen R. R. Co.										6	22			6	22	28
Philadelphia & Reading Ry. Co.	2				2	6				20	60			86	183	269
Philadelphia, Baltimore & Washington R. R. Co.										6	38			32	49	81
Pittsburgh & Lake Erie R. R. Co.											21		6	17	48	65
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co.	19	20						16		3	6		11	150	47	197
Pittsburgh, Shawmut & Northern R. R. Co.								14		30				116	22	138
Pontiac, Oxford & Northern R. R. Co.		2								11				17	10	27
Rio Grande Southern R. R. Co.								9		9	2			50	10	60
Rutland R. R. Co.									6					18	7	25
St. Joseph & Grand Island Ry. Co.													2	107	7	114
St. Louis & Hannibal Ry. Co.										6				38	22	60
St. Louis & San Francisco R. R. Co.	17				5		8	23	16	27	5		33	359	118	477
St. Louis, Brownsville & Mexico Ry. Co.			5					30	5	10	10			222	100	322
St. Louis, Iron Mountain & Southern Ry. Co.	12	6			7		13	8		52	17		23	404	240	644
St. Louis, San Fancisco & Texas Ry. Co.														16	20	36
St. Louis Southwestern Ry. Co.		6		6	6			6		18	5			51	30	81
St. Louis Southwestern Ry. Co. of Texas		6									10		5	135	99	234
San Antonio & Aransas Pass Ry. Co.	6	12								26	6	5	11	323	160	483
San Antonio, Uvalde & Gulf R. R. Co.		6						5					2	143	5	148
San Pedro, Los Angeles & Salt Lake R. R. Co.											11			67	14	81
Seaboard Air Line Ry. Co.	33	18	3		12			75	27	69	5		7	504	284	788
Seattle, Port Angeles & Western Ry. Co.										5			1	25		25
South Dakota Central Ry. Co.														24	7	31
Southern Pacific Co. (Pacific System)					8			49		84	31			437	108	545

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE II.—*An analysis of the primary contributing causes of delays responsible for the several instances of excess service shown by Table I*—Continued.

Name of railroad.	Congestion of traffic.		Station work, waiting for orders, and meeting trains.		Wire troubles.		Air troubles.		Hot boxes.		Coupler and drawbar defects.		Miscellaneous car defects.		Sickness, death, and personal injury.		Miscellaneous causes not otherwise specified.		Totals.		Combined total.
Southern Ry. Co	11		11		10		17				78	**11**	76	**59**			30		626	**186**	812
Southern Ry. Co. in Mississippi																			62	**5**	67
Spokane, Portland & Seattle Ry. Co							2										2		29		29
Susquehanna & New York R. R. Co											13	**5**							37	**30**	67
Tennessee Central R. R. Co			5						6										40	**40**	80
Texas & New Orleans R. R. Co								**6**			2		6	**3**			1		67	**41**	108
Texas & Pacific Ry. Co			14								10	**8**	62	**79**	5		5		498	**324**	822
Texas Mexican Ry. Co			5																35		35
Toledo & Ohio Central Ry. Co		**1**					7				10	**36**	39	**15**			1		100	**100**	200
Toledo & Western R. R. Co					6														13		13
Toledo, Saginaw & Muskegon Ry. Co	5		5																12	**22**	34
Tremont & Gulf R. R. Co				**5**			1						5						59	**5**	64
Trinity & Brazos Valley Ry. Co											5		5						57		57
Union Pacific R. R. Co	8			**5**					10		15			**5**			5		181	**59**	240
Vandalia R. R. Co	5		9			**5**	7												73	**10**	83
Vicksburg, Shreveport & Pacific Ry. Co																			5	**25**	30
Virginia & Southwestern Ry. Co													12						38		38
Virginian Ry. Co							5				14		5						121	**50**	171
Wabash, Chester & Western R. R. Co	5																		18		18
Wabash R. R. Co	133		285	**6**			20	**2**	12		55	**32**	76	**30**	2		284		1,496	**295**	1,791
Washington & Old Dominion Ry. Co	7										6								31		31
Western Pacific Ry. Co			2								2		15	**10**			2		198	**73**	271
Western Railway of Alabama											7								29		29
West Jersey & Seashore R. R. Co	2												2						41	**8**	49
Wichita Falls & Northwestern Ry. Co											6						5		90	**65**	155
Wichita Valley Ry. Co													10					**5**	135	**60**	195
Winston-Salem Southbound Ry. Co																			7	**18**	25
Yazoo & Mississippi Valley R. R. Co							5				20	**30**	53	**10**			12		216	**192**	408
Combined totals of all instances	1,059		2,256		119		884		296		5,117		7,509		156		1,709		59,373		59,373

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours) reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915.*

Name of railroad.	Employees in train service.																		
	Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.	Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.	Continuing on duty after aggregate service of 16 hours.																
			16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 to 26.	26 to 27.	27 to 28.	28 to 29.	29 to 30.	30 to 40.	40 or 50.	50 or more.	Total.
Alabama Great Southern R. RCo.					4															4
Alabama, Tennessee & Northern Ry. Co.			11		30	16														57
Arizona & New Mexico Ry. Co.																5				5
Arizona Eastern R. R. Co.					5															5
Asherton & Gulf Ry. Co.	10	5			4	5			1	1									8	19
Atchison, Topeka & Santa Fe Ry. Co.	8	13	28	12	18	6	3	5	5				4							81
Atlanta, Birmingham & Atlantic R. R. Co.																				
Atlantic City R. R. Co.																				
Atlantic Coast Line R. R. Co.			4	7		5		5			5									26
Augusta Southern R. R. Co.																				
Baltimore & Ohio Chicago Terminal R. R. Co.																				
Baltimore & Ohio System.	9	3	27	33	7	10	5	6												88
Bangor & Aroostook R. R. Co.		1		5		5														10
Bessemer & Lake Erie R. R. Co.																				
Boston & Albany R. R. Co.																				
Boston & Maine R. R. Co.		1		1																1
Buffalo & Susquehanna R. R. Corporation.																				
Buffalo, Rochester & Pittsburgh Ry. Co.																				
Camas Prairie R. R. Co.										1										1
Canadian Pacific Ry. Co.			3	10	4			3	2											22
Carolina, Atlantic & Western Ry. Co.			18	8																26
Carolina, Clinchfield & Ohio Ry. Co.		5																		
Central New England Ry. Co.		5																		
Central of Georgia Ry. Co.																				
Central R. R. Co. of New Jersey.	13	9		5	3	5													10	20
Central Vermont Ry. Co.	10	5	5						5											13

BLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more ...* *reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Employees in train service.																		
	Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.	Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.	Continuing on duty after aggregate service of 16 hours.																
			16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 to 26.	26 to 27.	27 to 28.	28 to 29.	29 to 30.	30 to 40.	40 to 50.	50 or more.	Total.
Charleston & Western Carolina Ry. Co.			1	2																3
Chesapeake & Ohio Ry. Co.				7	13	5		5												30
Chesapeake & Ohio Ry. Co. of Indiana.			1												1					2
Chicago & Alton R. R. Co.			5				5			5										15
Chicago & Eastern Illinois R. R. Co.			2		4															6
Chicago & Erie R. R. Co.																				
Chicago & North Western Ry. Co.	17	5	5	1	4	10	2	5		11			3			3				44
Chicago, Burlington & Quincy R. R. Co.	8		14	18	18	9	5	5		7	7	5	6		2		3			99
Chicago Great Western R. R. Co.						2		1												3
Chicago, Indiana & Southern R. R. Co.																				
Chicago, Milwaukee & St. Paul Ry. Co.	19	5	7	12	8		1	5	7											40
Chicago, Peoria & St. Louis Ry. Co. of Illinois.																				
Chicago, Rock Island & Gulf Ry. Co.		1	8			1														9
Chicago, Rock Island & Pacific Ry. Co.			51	14	39	14	5	5		5										133
Chicago, St. Paul, Minneapolis & Omaha Ry. Co.								1												1
Chicago, Terre Haute & Southeastern Ry. Co.			2	2																4
Cincinnati, Hamilton & Dayton Ry. Co.				3		10		3												16
Cincinnati, New Orleans & Texas Pa- ... Co.					7		3	1												11
... R. R. Co.			7	2																9
... St.																				
			1	11	10	4														26
				5								2								7
					1												1			2
																				1

Delaware & Hudson Co.				2																2
Delaware, Lackawanna & Western R. R. Co.						2														2
Denver & Rio Grande R. R. Co.	3	1	3	19	5	4	1	5					8	3						48
Denver & Salt Lake R. R. Co.			21	10									3							38
Detroit & Mackinac Ry. Co.				3		1	1													7
Detroit, Grand Haven & Milwaukee Ry. Co.																				
Detroit, Toledo & Ironton Ry. Co.																				
Duluth, South Shore & Atlantic Ry. Co.																				
Elgin, Joliet & Eastern Ry. Co.																				
El Paso & Southwestern System	1					2	4		2											12
Erie R. R. Co.		4	8			1		2												12
Florida East Coast Ry. Co.	6																			6
Fort Smith & Western R. R. Co.	1																		5	5
Fort Worth & Denver City Ry. Co.	15		3			2	8										5			18
Gainesville & Northwestern R. R. Co.				4															5	9
Galveston, Harrisburg & San Antonio Ry. Co.	5		10		5	3														18
Georgia & Florida Ry. Co.																				
Georgia Railroad								2												2
Georgia Southern & Florida Ry. Co.																				2
Grand Rapids & Indiana Ry. Co.	1		2																	2
Grand Trunk Western Ry. Co.																				
Great Northern Ry. Co.	1		2																	2
Gulf, Colorado & Santa Fe Ry. Co.			5		12	6	6													40
Hagerstown & Frederick Ry. Co.	29																			
Hocking Valley Ry. Co.																				
Houston & Shreveport R. R. Co.			5																	5
Houston & Texas Central R. R. Co.			5		6															11
Houston East & West Texas Ry. Co.			3	2		5														11
Illinois Central R. R. Co.	9		6	5	10															22
Illinois Southern Ry. Co.																				
Illinois Traction System				2					2											7
Indiana Harbor Belt R. R. Co.																				
International & Great Northern Ry. Co.	10		3		5			2	2	5	5									36
Kanawha & Michigan Ry. Co.				3																6
Kansas City, Clinton & Springfield Ry. Co.																				
Kansas City, Mexico & Orient Ry. Co.	35																			5
Kansas City, Mexico & Orient Ry. Co. of Texas	1		10	7	15		3				2									41
Kansas City Southern Ry. Co.	1	8		4	5		6													21
Lake Erie & Western R. R. Co.			8				2													12
Lake Shore & Michigan Southern Ry. Co.	2				6															11
Lehigh & Hudson River Ry. Co.																				
Lehigh Valley R. R. Co.			55	75	28	27	8		6	4	2									205
Long Island R. R. Co.																				
Louisiana & Arkansas Ry. Co.																				
Louisiana Ry. & Navigation Co.			2	6	10	14	10	5			5			6		5	6			74
Louisiana Western R. R. Co.			2																	2

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours) reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Employees in train service.																			
	Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.	Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.	Continuing on duty after aggregate service of 16 hours.																	
			16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 to 26.	26 to 27.	27 to 28.	28 to 29.	29 to 30.	30 to 40.	40 to 50.	50 or more.	Total.
Louisville & Nashville R. R. Co.	1		37	17		12	14				1	3								84
Macon & Birmingham Ry. Co.																				
Maine Central R. R. Co.																				
Michigan Central R. R. Co.		1	11	2	2															15
Midland Valley R. R. Co.																				
Milford, Attleboro & Woonsocket St. Ry. Co.				2	1	1	1		2	3	10									20
Minneapolis & St. Louis R. R. Co.	12		15		5															20
Minneapolis, St. Paul & S. Ste. Marie Ry. Co.	4	4	8		5					6										19
Minn., St. P., Roch. & Dubuque Elec. Trac. Co.	7																			
Missouri & North Arkansas R. R. Co.			1	8	2					5										16
Missouri, Kansas & Texas Ry. Co.	5		7	3	2	3							5							20
Missouri, Kansas & Texas Ry. Co. of Texas		10	10			8		5												23
Missouri, Oklahoma & Gulf Ry. Co.		5																		
Missouri Pacific Ry. Co.	24		11	7	6	11	6		1	5	2						9			58
Mobile & Ohio R. R. Co.			2																	2
Morgan's Louisiana & Texas R. R. & S. S. Co.	6																			
Nashville, Chattanooga & St. Louis Ry. Co.	4		17		5			6												28
Nevada-California-Oregon Ry. Co.	4		4																	4
New Jersey & Pennsylvania Traction Co.																				
New Mexico Central R. R. Co.					4															4
New Orleans & Northeastern R. R. Co.	5																			

New Orleans Great Northern R. R. Co.				5	1															6
New Orleans, Texas & Mexico R. R. Co.				5																5
New York Central R. R. Co.			9	6	2		1													18
New York, Chicago & St. Louis R. R. Co.																				
New York, New Haven & Hartford R. R. Co.			6	2		1														9
New York, Ontario & Western Ry. Co.			1																	1
New York, Susquehanna & Western R. R. Co.																				
Norfolk & Western Ry. Co.			2	4		5														11
Norfolk Southern R. R. Co.																				
Northern Pacific Ry. Co.	5	3	13	13	10	7	2			5	6	1			1	5	6		1	70
Northwestern Pacific R. R. Co.						1	2													3
Norwich & Westerly Traction Co.	13	2	2																	2
Ohio River & Western Ry. Co.			1																	1
Oregon Short Line R. R. Co.	5		8			1				5				1						15
Oregon-Washington R. R. & Navigation Co.	1		6	1	6	2	6	6												27
Pacific Electric Ry. Co.	3	2	3	1	3				2											9
Pacific Ry. & Navigation Co.																			5	5
Panhandle & Santa Fe Ry. Co.[1]			1							5										6
Pennsylvania Lines West of Pittsburgh.		1		4	2	1		9	5	1				4		1				27
Pennsylvania R. R. Co.[2]	2		33	52	21	21	23	2	6	5		4	15							182
Pere Marquette R. R. Co.	4	5																		
Perkiomen R. R. Co.				1																1
Philadelphia & Reading Ry. Co.		3	1	2	6	5		3	5		3	7								32
Philadelphia, Baltimore & Washington R. R. Co.								2												2
Pittsburgh & Lake Erie R. R. Co.			2		2			1												5
Pittsburgh, Cinn., Chic. & St. Louis Ry. Co.	8			5		1							3							9
Richmond, Fredericksburg & Potomac R. R. Co.					2															2
Rio Grande Southern R. R. Co.																				
Rutland R. R. Co.																				
St. Joseph & Grand Island Ry. Co																				
St. Louis & Hannibal Ry. Co.	1	4																		
St. Louis & San Francisco R. R. Co.	16		13	12	6	5		2												38
St. Louis, Brownsville & Mexico Ry. Co.																				
St. Louis, Iron Mountain & Southern Co.	15		21	9	5			2	3						3					43
St. Louis, San Francisco & Texas Ry. Co.																				
St. Louis Southwestern Ry. Co.																				
St. Louis Southwestern Ry. Co. of Texas					3															3
San Antonio & Aransas Pass Ry.		5																		
San Antonio, Uvalde & Gulf R. R. Co.	1																			
San Pedro, Los Angeles & Salt Lake R. R. Co.				5					5											10
Seaboard Air Line Ry. Co.				9				2	3	5	11						5			35
Seattle, Port Angeles & Western Ry. Co.					5															5

[1] Includes the Pecos & Northern Texas Ry. Co., and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Employees in train service.																			
	Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.	Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.	Continuing on duty after aggregate service of 16 hours.																	
			16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 to 25.	25 to 26.	26 to 27.	27 to 28.	28 to 29.	29 to 30.	30 to 40.	40 to 50.	50 or more.	Total.
Southern Pacific Company (Pacific System)	3	2	14	18	4	8	1	3			2					1	9			60
Southern Ry. Co.			5	5	10	2	5													27
Southern Ry. Co. in Mississippi						5														5
Spokane, Portland & Seattle Ry. Co.				1																1
Susquehanna & New York R. R. Co.				1																1
Texas & New Orleans R. R. Co.																				
Texas & Pacific Ry. Co.			3	14	10	5		3									2			37
Toledo & Ohio Central Ry. Co.			2	1																3
Toledo & Western R. R. Co.			1									3								4
Toledo, Saginaw & Muskegon Ry. Co.																				
Trinity & Brazos Valley Ry. Co.																				
Union Pacific R. R. Co.			13	18	6		5							3						45
Vandalia R. R. Co.	5		2	11																13
Virginia & Southwestern Ry. Co.																				
Virginian Ry. Co.			3	6																9
Wabash, Chester & Western R. R. Co.																				
Wabash R. R. Co.	52	12	9	7	2				8									3		29
Washington Southern Ry. Co.																				
Western Pacific Ry. Co.	5		5	8	2															15
West Jersey & Seashore R. R. Co.		5		3	5								1			1				10
Wichita Falls & Northwestern Ry. Co.																				
Wichita Valley Ry. Co.				4																4
Winston-Salem Southbound Ry. Co.					1								5							6
Yazoo & Mississippi R. R. Co.				5	5										4					14
Combined totals of all instances	435	135	667	598	442	291	151	117	73	86	61	39	53	17	11	21	47	3	34	2,711

Name of railroad.	Telegraph operators. On duty more than 9 hours in continuously operated day-and-night offices. 9 to 10.	10 to 11.	11 to 12.	12 to 13.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 24.	24 or more.	Total.	On duty more than 13 hours in offices operated only during the daytime. 13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 or more.	Total.
Alabama Great Southern R. R. Co.		1	1	31												33													
Alabama, Tennessee & Northern Ry. Co.																													
Arizona & New Mexico Ry. Co.																													
Arizona Eastern R. R. Co.							1									1			1	1									2
Asherton & Gulf Ry. Co.																													
Atchison, Topeka & Santa Fe Ry Co.	26	50	61	954	23	4	6		2							1,126	13	18	11	8	5								55
Atlanta, Birmingham & Atlantic R. R. Co.				1	5											6													
Atlantic City R. R. Co.																	2	3	4	1		1		1					12
Atlantic Coast Line R. R. Co.	3	5	6	176	4	2	3	2	1							202	3	4	4	4	1		1	1					18
Augusta Southern R. R. Co.	1	3	5	6	1											16													
Baltimore & Ohio Chicago Terminal R. R. Co.								1								1													
Baltimore & Ohio System	11	33	25	128	6		8	1								212	6	9	12	6	1			1					35
Bangor & Aroostook R. R. Co.		1		2	1											4	1		1									1	3
Bessemer & Lake Erie R. R. Co.	5	1	4	52												62													
Boston & Albany R. R. Co.	3	9	8	152	1											173		2	4	3				1					10
Boston & Maine R. R. Co	4	13	33	372	18		1	3		1						445	2	3	1	3		2							11
Buffalo & Susquehanna R. R. Corporation				2			1									3													
Buffalo, Rochester & Pittsburgh Ry. Co.		2		3	1											6				1	2								3
Camas Prairie R. R. Co.		10	2	15			7	1								35													
Canadian Pacific Ry. Co.																	1	1		1		1							4
Carolina, Atlantic & Western Ry. Co.																													
Carolina, Clinchfield & Ohio Ry. Co.																													
Central New England Ry. Co.	2	6	1													9	2			1		1		1					5
Central of Georgia Ry. Co.	2	1	1	52			2									58		3	1	1	1		1						7
Central R. R. Co. of New Jersey	2	1						2								5											1		1
Central Vermont Ry. Co.			1	45												46		2	3	2	2								9
Charleston & Western Carolina Ry. Co.																													
Chesapeake & Ohio Ry. Co.	1	4	10	232	2											249	2	1	4	7	7							1	22
Chesapeake & Ohio Ry. Co. of Indiana			1	3												4				1									1
Chicago & Alton R. R. Co.	2	1	3	30												36		2											2
Chicago & Eastern Illinois R.R. Co.	3	12	7	303	3				1							329	1	2	2	2	1								8

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours) reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Telegraph operators.																												
	On duty more than 9 hours in continuously operated day-and-night offices.																On duty more than 13 hours in offices operated only during the daytime.												
	9 to 10.	10 to 11.	11 to 12.	12 to 13.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 24.	24 or more.	Total.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 or more.	Total.
Chicago & Erie R. R. Co		1	1	9				1								12													
Chicago & North Western Ry. Co	61	32	37	27	14	1	1	4	6		1			1		185	28	39	24	23	7	2	5	4	2	1	3	1	139
Chicago, Burlington & Quincy R. R. Co	20	64	61	200	17	4	1	2	2						1	372	43	37	24	18	8	9	1	4		1	1	3	149
Chicago Great Western R. R. Co	4	9	1	10	6	1	1			2						34	11	15	14	6	3	1	1					1	52
Chicago, Indiana & Southern R. R. Co	2	1		43				1								47		1	1										2
Chicago, Milwaukee & St. Paul Ry. Co	56	56	26	122	19	9	7	4	6	1		1				307	52	64	49	31	7	6	2	2	1	3	1	4	222
Chicago, Peoria & St. Louis Ry. Co. of Illinois				2												2		1	2	2	1					1			7
Chicago, Rock Island & Gulf Ry. Co				5												5	2	2	1	1									6
Chicago, Rock Island & Pacific Ry. Co	52	32	8	73	8	2	11	2	1	1				1		191	21	20	17	6	7	4	3		1	1			80
Chicago, St. Paul, Minneapolis & Omaha Ry. Co	3	3		13	7			1	1							28		1	3	1	1		1						7
Chicago, Terre Haute & Southeastern Ry. Co	5	1	1	30	4	2	1	4								48	2	10	9	1								2	24
Cincinnati, Hamilton & Dayton Ry. Co	3	2	4	19												28	1		1					1					3
Cincinnati, New Orleans & Texas Pacific Ry. Co	1	2					1									4		7	1	1									9
Cincinnati Northern R. R. Co			1	3										1		5	1	3			2								6
Cleveland, Cincinnati, Chicago & St. Louis Ry. Co	8	5	4	59		3	1	3	1							84	6												6
Coal & Coke Ry. Co																		1	1										2
Colorado & Southern Ry. Co	3	6	11	53	1		1	1								76	7	7	2	1		1			1		1		20
Cumberland Valley R. R. Co			2	33												35													
Delaware & Hudson Co	11	10	2	27		2		1				1				54	2	2	3	2	1	1	1	1				2	15
Delaware, Lackawanna & Western R. R. Co	5	1	3	7			1									17	1	1	1	2								1	6
Denver & Rio Grande R. R. Co	1	3	1	31	1	1	1		1	1						41	18	10	7	4	1		1						41
Denver & Salt Lake R. R. Co		1		3												4			1										1
Detroit & Mackinac Ry. Co																													
Detroit, Grand Haven & Milwaukee Ry. Co		1	1	20												22	3	2										1	6
Detroit, Toledo & Ironton Ry. Co	1	1		6	2			2								12	1	1		1		1							4

Duluth, South Shore & Atlantic Ry. Co				2												2	3	3	2									1	11
Elgin, Joliet & Eastern Ry. Co		1		5												7													
El Paso & Southwestern System		2		14	1											17											1		3
Erie R. R. Co	18	23	19	98	3	1	2									164	13	10	6								1		33
Florida East Coast Ry. Co				8												8													
Fort Smith & Western R. R. Co																			1										1
Fort Worth & Denver City Ry. Co	8	1	3	106	2	1	1									122	2	4	4		2			2			1	3	19
Gainesville & Northwestern R. R. Co																													
Galveston, Harrisburg & San Antonio Ry. Co	2	4	42	23	3											74	5											1	7
Georgia & Florida Ry. Co																										1			1
Georgia Railroad																													1
Georgia Southern & Florida Ry. Co		2			1	1										6	3	3	3						1	1			12
Grand Rapids & Indiana Ry. Co	13	2	2	19		2	1									39	4												4
Grand Trunk Western Ry. Co				6												6													
Great Northern Ry. Co	2	1	8	48	2	1	1	1								64		1											4
Gulf, Colorado & Santa Fe Ry. Co	1	3	5	68	6		7									90	3	5	1	3	2								14
Hagerstown & Frederick Ry. Co																													
Hocking Valley Ry. Co			1	1												2													
Houston & Shreveport R. R. Co																													
Houston & Texas Central R. R. Co		2	3	83		1										89		3	2	1	1								7
Houston East & West Texas Ry. Co						1										1													
Illinois Central R. R. Co	9	14	8	164	3	3		1								202	9	8	5	7	3		1		1		3	1	38
Illinois Southern Ry. Co																			1										1
Illinois Traction System																													
Indiana Harbor Belt R. R. Co				8												8													
International & Great Northern Ry. Co	1	3	3	29	1	1		1								39	3	5	5	2	2	2	2	1	1				23
Kanawha & Michigan Ry. Co	1		1													2	1	1											2
Kansas City, Clinton & Springfield Ry. Co				3												3	10	14	17	4	4	3		1	2	3	1	2	61
Kansas City, Mexico & Orient Ry. Co		2	1													3	10	20	5	2	2		1	1				2	44
Kansas City, Mexico & Orient Ry. Co. of Texas		2	1					1								4	1	1	3	2	3					1			11
Kansas City Southern Ry. Co	14	19	10	45	2		3	2		1					1	97	2	3	5		3	2	2	1				3	25
Lake Erie & Western R. R. Co	1		1	15												17													
Lake Shore & Michigan Southern Ry. Co	1	2	1	56			1	1								62													
Lehigh & Hudson River Ry. Co				5												5													
Lehigh Valley R. R. Co	5	3	7	39	2											56													
Long Island R. R. Co		1	5	6	1		1	13			1	1				29				1		1	1						3
Louisiana & Arkansas Ry. Co	2	2		2	10											16	5	1	3										9
Louisiana Ry. & Navigation Co			3	9	5				1							18	5	3	4	2	3	1	4	4	1		1		28
Louisiana Western R. R. Co	3															3			1										1
Louisville & Nashville R. R. Co	5	8	8	83	2		2	1			1					110	1	4	2	1	1								9
Macon & Birmingham Ry. Co																		2	1										3
Maine Central R. R. Co	10	21	9	68	5		1									114	19	7	7	3						1			37
Michigan Central R. R. Co	2	2	7	19	6											36	2					1							3
Midland Valley R. R. Co		1			1											2		3											3
Milford, Attleboro & Woonsocket St. Ry. Co																													
Minneapolis & St. Louis R. R. Co	1	8	2	12	2	1										26	7	3	9	5	5			1					30

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours) reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Name of railroad.	Telegraph operators.																												
	On duty more than 9 hours in continuously operated day-and-night offices.																On duty more than 13 hours in offices operated only during the daytime.												
	9 to 10.	10 to 11.	11 to 12.	12 to 13.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 24.	24 or more.	Total.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 or more.	Total.
Minneapolis, St. Paul & S. Ste. Marie Ry. Co	9	10	18	196	6	3		1	1	1						245	6	8	7	4	4								29
Minn., St. P., Roch. & Dubuque Elec. Trac. Co																													
Missouri & North Arkansas R. R. Co				10				1								11	3	2	2		2	3	2						14
Missouri, Kansas & Texas Ry. Co	5	5	2	60	7	2	1	8		1						91	53	44	20	20	9	8	7	2	4	1	3	2	173
Missouri, Kansas & Texas Ry. Co. of Texas		1	8	19	13		2						4			47	6	8	4	8	5	6	2	1	1			5	46
Missouri, Oklahoma & Gulf Ry. Co																				1						1			2
Missouri Pacific Ry. Co	41	52	25	128	13	1				2					1	263	36	31	21	17	7	2	1				2		117
Mobile & Ohio R. R. Co				33	1											34		1	1										2
Morgan's Louisiana & Texas R. R. & S. S. Co	4				1											5													
Nashville, Chattanooga & St. Louis Ry. Co	15	27	7	26	2	1										78	1	2											3
Nevada-California-Oregon Ry. Co																													
New Jersey & Pennsylvania Traction Co			707													707													
New Mexico Central R. R. Co																													
New Orleans & Northeastern R. R. Co				2							1					3		1	1	1									3
New Orleans Great Northern R. R. Co				4												4	1	1	1	4									7
New Orleans, Texas & Mexico R. R. Co				2												2		1				1	1					1	4
New York Central R. R. Co	18	19	9	32		1										79	8	6	6	6	2								28
New York, Chicago & St. Louis R. R. Co	1	2	4	18												25			1		1								2
New York, New Haven & Hartford R. R. Co	42	28	25	235	1	1		2								334	3	11		3		1							18
New York, Ontario & Western Ry. Co	2	4	6	97												109	3	1		1									5
New York, Susquehanna & Western R. R. Co		2	1	23	2											28													
Norfolk & Western Ry. Co		4	5	15		1		1								26	3	2	2		1			1					9
Norfolk Southern R. R. Co				1					1							2													

Northern Pacific Ry. Co.		9	11	57	5	3	6		2							97	4	7	1	3					1				16
Northwestern Pacific R. R. Co.		1	2													5	1	1	1									2	5
Norwich & Westerly Traction Co.																													
Ohio River & Western Ry. Co.																													
Oregon Short Line R. R. Co.		12	8	29	1	1										55			1										1
Oregon-Washington R. R. & Navigation Co.	3		4	4		2	1			1						19	2	3	1		1								7
Pacific Electric Ry. Co.																1													
Pacific Ry. & Navigation Co.																	4												4
Panhandle & Santa Fe Ry. Co.[1]		1	2	40												43													
Pennsylvania Lines West of Pittsburgh.	25	25	10	212	5	3		2								282	6	1	1		3	1							12
Pennsylvania R. R. Co.[2]	84	49	31	148	10											322		2	2		1								5
Pere Marquette R. R. Co.	8	7	3	18												45	223	125	36	21	17	8	2			2	1	1	434
Perkiomen R. R. Co.																													
Philadelphia & Reading Ry. Co.	19	13	13	72												126			4							2			6
Philadelphia, Baltimore & Washington R. R. Co.	9	12	6	15												42		1	1										2
Pittsburgh & Lake Erie R. R. Co.		3	5	66												81													
Pittsburgh, Cinn., Chic. & St. Louis Ry. Co.	21	13	8	39												86	1	1	2										4
Richmond, Fredericksburg & Potomac R. R. Co.	5	3		60												69													
Rio Grande Southern R. R. Co.			1													1													
Rutland R. R. Co.			2	12												15	5	2		2									9
St. Joseph & Grand Island Ry. Co.		2														6	1	3	3		2			2					12
St. Louis & Hannibal Ry. Co.																													
St. Louis & San Francisco R. R. Co.	1	4	4	84	5			3	1	2						105	7	10	7	8	2	3	1		1				39
St. Louis, Brownsville & Mexico Ry. Co.		1		8												10													
St. Louis, Iron Mountain & Southern Ry. Co.	3		3	115				1	1							131	4	12	4	4		3			2		1		30
St. Louis, San Francisco & Texas Ry. Co.																1													
St. Louis Southwestern Ry. Co.				3	10											13	1												1
St. Louis Southwestern Ry. Co. of Texas.					3											3	4	3	3	4	1						1	1	18
San Antonio & Aransas Pass Ry.																	4		2	3		1			1				12
San Antonio, Uvalde & Gulf R. R. Co.																													
San Pedro, Los Angeles & Salt Lake R. R. Co.				6									6			12		1										1	2
Seaboard Air Line Ry. Co.	8	10	14	254	25	2	3					2				318		3	3	1	7			1	1			1	17
Seattle, Port Angeles & Western Ry. Co.																													
Southern Pacific Company (Pacific System).	4		5	22	8	3			2							53	4	4	1		1		1						11
Southern Ry. Co.	5		11	351	3	1		1								379	5	5	8	4	3		1						26
Southern Ry. Co. in Mississippi.																1													
Spokane, Portland & Seattle Ry. Co.	2	2	2													6													1
Susquehanna & New York R. R. Co.																	1		1			1							4
Texas & New Orleans R. R. Co.		2		26	1											31	2		1		1								4
Texas & Pacific Ry. Co.		4	4	24	3	1		1								38		3	4										7
Toledo & Ohio Central Ry. Co.		2		8												12													

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.

[2] Includes the Northern Central Ry. Co.

TABLE III.—*Summary of all instances of excess service (other than those in which employees in train service were on duty more than 16 consecutive hours) reported by the designated carriers as having occurred on their respective lines during the fiscal year ending June 30, 1915*—Continued.

Telegraph operators.—On duty more than 9 hours in continuously operated day-and-night offices.

Name of railroad.	9 to 10.	10 to 11.	11 to 12.	12 to 13.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 24.	24 or more.	Total.
Toledo & Western R. R. Co	1	4	2	2		2										11
Toledo, Saginaw & Muskegon Ry. Co																
Trinity & Brazos Valley Ry. Co				1												1
Union Pacific R. R. Co	7	12	11	6	2	1	1	1		1						42
Vandalia R. R. Co	36	19	3	27	3	3		4								95
Virginia & Southwestern Ry. Co				13												13
Virginian Ry. Co		3	1	37	1											42
Wabash, Chester & Western R. R. Co																
Wabash R. R. Co	105	72	19	146	8	2	3	4	2							361
Washington Southern Ry. Co	2	3	1	41												47
Western Pacific Ry. Co	8	9	3	14			2	1		1						38
West Jersey & Seashore R. R. Co	3	4	5	9	1											22
Wichita Falls & Northwestern Ry. Co			1				1									2
Wichita Valley Ry. Co																
Winston-Salem Southbound Ry. Co					2											2
Yazoo & Mississippi R. R. Co			1	69	2											72
Combined totals of all instances	914	994	1,503	7,338	364	83	100	93	34	16	4	5	11	3	4	11,466

Telegraph operators.—On duty more than 13 hours in offices operated only during the daytime.

Name of railroad.	13 to 14.	14 to 15.	15 to 16.	16 to 17.	17 to 18.	18 to 19.	19 to 20.	20 to 21.	21 to 22.	22 to 23.	23 to 24.	24 or more.	Total.
Toledo & Western R. R. Co													
Toledo, Saginaw & Muskegon Ry. Co	4	2	5	2									13
Trinity & Brazos Valley Ry. Co													
Union Pacific R. R. Co	4	8	13	1									26
Vandalia R. R. Co	19	6	7	3						1			36
Virginia & Southwestern Ry. Co													
Virginian Ry. Co			4		1								5
Wabash, Chester & Western R. R. Co	1	3	1									4	9
Wabash R. R. Co	211	106	53	17	5	3	2	5		1		1	404
Washington Southern Ry. Co													
Western Pacific Ry. Co	8	8	5	1	2	2	1					1	28
West Jersey & Seashore R. R. Co	2	2	1		2								7
Wichita Falls & Northwestern Ry. Co	1		1	2	1	1						1	7
Wichita Valley Ry. Co													
Winston-Salem Southbound Ry. Co													
Yazoo & Mississippi R. R. Co			2	1									3
Combined totals of all instances	993	819	541	332	171	87	53	40	22	20	23	51	3,152

TABLE IV.—*Summary of all instances of excess service reported by the designated carriers as having occurred on their respective lines during the fiscal years ending June 30, 1913, 1914, and 1915.*

[NOTE.—Railroads which have reported fewer than 25 instances of excess service in the aggregate for each of the years under consideration have not been enumerated.]

Name of railroad.	Employees in train service.												Telegraph operators.						Total of all instances.		
	Continuing on duty for longer periods than 16 consecutive hours.			Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.			Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.			Continuing on duty after aggregate service of 16 hours.			On duty more than 9 hours in continuously operated day-and-night offices.			On duty more than 13 hours in offices operated only during the daytime.					
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Alabama Great Southern R. R. Co.	272	210	15									4	63	67	33				335	277	52
Alabama, Tennessee & Northern Ry. Co.		93	162		6						88	57					1			188	219
Albany Southern R. R. Co.		40	2																	40	2
Ann Arbor R. R. Co.	112	68	15								1		17	8		7	4	3	136	81	18
Apalachicola Northern R. R. Co.	34	19	5				2			4		5			4			1	40	19	15
Arizona & New Mexico Ry. Co.	24		51									5							24		56
Arizona Eastern R. R. Co.	58	51	18							12		5			1	1	4	2	71	55	26
Arkansas, Louisiana & Gulf Ry. Co.		35	5																	35	5
Asherton & Gulf Ry. Co.			19			10			5			19									53
Atchison, Topeka & Santa Fe Ry. Co.	3,232	1,598	1,267	4	19	8	10		13	282	91	81	1,056	1,003	1,126	74	86	55	4,658	2,797	2,550
Atlanta, Birmingham & Atlantic R. R. Co.	642	147	289							5			10		6	2			659	147	295
Atlantic & St. Lawrence Ry. Co.	43	169	32											4			1		43	174	32
Atlantic City R. R. Co.	23	72	32														3	12	23	75	44
Atlantic Coast Line R. R. Co.	665	766	518				5			30	29	26	491	311	202	34	32	18	1,225	1,138	764
Atlantic Shore Ry. Co.		11			6						8	2	5	2	5				5	27	7
Augusta Southern R. R. Co.	98	51	76							5	1		10	7	16	4			117	59	92
Baltimore & Ohio Chicago Terminal R. R. Co.	214	79	39								1		1	2	1				215	82	40
Baltimore & Ohio System [1]	25,300	5,719	6,991	9	10	9	1		3	115	129	88	1,333	1,694	212	111	109	35	26,869	7,661	7,338
Bangor & Aroostook R. R. Co.	418	460	73	18	3				1	11	5	10		10	4	7	14	3	454	492	91
Beaumont, Sour Lake & Western Ry. Co.	142	33	11														2		142	35	11
Bennettsville & Cheraw R. R. Co.	42	15	5	36	8														78	23	5
Berkshire Street Ry. Co.		42	5																	42	5

[1] The figures for the year ending June 30, 1914, include those for the Cincinnati, Hamilton & Dayton Ry. Co.

TABLE IV.—*Summary of all instances of excess service reported by the designated carriers as having occurred on their respective lines during the fiscal years ending June 30, 1913, 1914, and 1915*—Continued.

Name of railroad.	Employees in train service.												Telegraph operators.						Total of all instances.		
	Continuing on duty for longer periods than 16 consecutive hours.			Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.			Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.			Continuing on duty after aggregate service of 16 hours.			On duty more than 9 hours in continuously operated day-and-night offices.			On duty more than 13 hours in offices operated only during the daytime.					
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Bessemer & Lake Erie R. R. Co.	629	411	64								1		231	281	62				860	693	126
Birmingham Terminal Co.													17	40	22				17	40	22
Blue Ridge Ry. Co.	27	18	3								6								27	24	3
Boca & Loyalton R. R. Co.	5	44	9																5	44	9
Boston & Albany R. R. Co.	323	38	25							43	8		487	369	173		12	10	853	427	208
Boston & Maine R. R.	1,494	475	298		3			2	1	3	2	1	442	459	445	16	41	11	1,955	982	756
Boyne City, Gaylord & Alpena R. R. Co.	66	97	8							4									70	97	8
Buffalo & Susquehanna R. R. Corporation.	130	59	22										4		3	1	2		135	61	25
Buffalo & Susquehanna Ry. Co.	27													1					27	1	
Buffalo, Rochester & Pittsburgh Ry. Co.	603	322	83							1			51	70	6	18	9	3	673	401	92
Butte, Anaconda & Pacific Ry. Co.	30	51	6							6			5	2					41	53	6
Camas Prairie R. R. Co	99	50	6	17						7	8	1	12		35	73	13		208	71	42
Canadian Pacific Ry. Co.	110	109	45							59	35	22	9	13		2	8	4	180	165	71
Carolina & Northwestern Ry. Co.	235	37	27																235	37	27
Carolina, Atlantic & Western Ry. Co[1].	5	19	5		2							26							5	21	31
Carolina, Clinchfield & Ohio Ry. Co.	169	200	159				8		5		4								177	204	164
Central California Traction Co.	60	10		32															92	10	
Central Indiana Ry. Co.	221	61	59	5									3						229	61	59
Central New England Ry. Co.	48	97	34	3			2		5		1		7	3	9	2	7	5	62	108	53
Central of Georgia Ry. Co.	1,767	585	323					3		12			155	71	58	9		7	1,943	659	388
Central R. R. Co. of New Jersey	386	441	293			13		2	9	4	17	23	3	32	5	2	1	1	395	493	344
Central Vermont Ry. Co.	444	485	155	5		10			5	3	19	10	98	39	46	43	28	9	593	571	235
Central West Virginia & Southern R. R. Co.	57	21	10																57	21	10
Charleston & Western Carolina Ry. Co.	262	162	38							6		3							268	162	41

Charlotte Harbor & Northern Ry. Co.	44	50	22		4														44	54	22
Chesapeake & Ohio Ry. Co.	4,740	3,130	3,856							56	32	30	381	207	249	54	15	22	5,231	3,384	4,157
Chesapeake & Ohio Ry. Co. of Indiana	1,720	680	228				5			5		2	.61	21	4	3	8	1	1,794	709	235
Chesterfield & Lancaster R. R. Co.	6	15	31																6	15	31
Chicago & Alton R. R. Co.	1,821	646	293							5	16	15	51	58	36	12	17	2	1,889	737	346
Chicago & Eastern Illinois R. R. Co.	4,781	812	227	1	2			2		4	3	6	581	533	329	12	11	8	5,379	1,363	576
Chicago & Erie R. R. Co.	1,798	1,427	136							2			298	208	12	11	6		2,109	1,641	148
Chicago & Northwestern Ry. Co.	791	613	660		8	17		5	5	35	10	44	48	75	185	62	73	139	936	784	1,050
Chicago, Burlington & Quincy R. R. Co.	4,837	2,543	1,843	2	12	8		2		114	70	99	696	460	372	104	72	149	5,753	3,159	2,471
Chicago, Detroit & Canada Grand Trunk Junction R. R. Co.	96	60	19								1		10	32	1		6	1	106	99	21
Chicago Great Western R. R. Co.	785	273	241		2			4		13	7	3	174	87	34	17	54	52	989	427	330
Chicago, Indiana & Southern R. R. Co.	204	188	88										9	14	47	1		2	214	202	187
Chicago, Indianapolis & Louisville Ry. Co.	1,595	713	127																1,595	713	127
Chicago, Memphis & Gary R. R. Co.	113	62	26	4															117	62	26
Chicago, Milwaukee & Gary Ry. Co.	499	55	1	2						11	5								512	60	1
Chicago, Milwaukee & St. Paul Ry. Co.	5,604	2,534	1,079	50	17	19	26	2	5	212	108	40	605	596	307	379	208	222	6,876	3,465	1,672
Chicago, Peoria & St. Louis Ry. Co. of Illinois	630	622	106							5			7	14	2	6		7	648	643	115
Chicago, Rock Island & Gulf Ry. Co.	129	188	92		3		4	3		6	10	9		1	5	7	4	6	146	209	113
Chicago, Rock Island & Pacific Ry. Co.	2,213	1,127	713	48	4			32		151	101	133	343	220	191	48	53	80	2,804	1,537	1,117
Chicago, St. Paul, Minneapolis & Omaha Ry. Co.	9	31	15	2	2					5			198	63	28	6	4	7	220	100	51
Chicago, Terre Haute & Southeastern Ry. Co.	299	228	87								5	4	10	51	48	2	21	24	311	305	163
Cincinnati, Hamilton & Dayton Ry. Co.[2]	1,482		202	5						6		16	9		28	7		3	1,510		249
Cincinnati, Lebanon & Northern Ry. Co.	54	10	25							20			10			2			86	10	25
Cincinnati, New Orleans & Texas Pacific Ry. Co.	555	249	33							3	23	11	34	9	4	8	2	9	600	283	57
Cincinnati Northern R. R. Co.	520	337	96	7	2					6	13	9	5	3	5	1	3	6	539	358	116
Cincinnati, Saginaw & Mackinaw R. R. Co.	21	32	4											12	1		8		21	52	5
Cleveland, Cincinnati, Chicago & St. Louis Ry. Co.	2,552	1,859	824	5	8					18	36	26	420	218	84	1	5	6	2,996	2,126	940
Coal & Coke Ry. Co.	1,371	2,055	1,073			5					2	7						2	1,371	2,057	1,067
Colorado & Southern Ry. Co.	720	1,006	331	5	5	4	2				16	2	146	181	76	43	48	20	916	1,256	433
Colorado Midland Ry. Co.	748	442	279																748	442	279
Columbia & Puget Sound R. R. Co.	44	30								2			13	7	1	1			60	38	1
Copper River & Northwestern Ry. Co.	305	332	14	38	14			5	1	4	1								347	352	15
Corvallis & Eastern R. R. Co.	30	38	5							4	3	2		3	1			7	34	44	15
Crittenden R. R. Co.	60																		60		

[1] Includes the South Carolina Western Ry. Co. and the North & South Carolina Ry. Co.
[2] Figures for the year ending June 30, 1914, are included with those for the Baltimore & Ohio System.

TABLE IV.—*Summary of all instances of excess service reported by the designated carriers as having occurred on their respective lines during the fiscal years ending June 30, 1913, 1914, and 1915*—Continued.

Name of railroad.	Employees in train service.												Telegraph operators.						Total of all instances.		
	Continuing on duty for longer periods than 16 consecutive hours.			Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.			Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.			Continuing on duty after aggregate service of 16 hours.			On duty more than 9 hours in continuously operated day-and-night offices.			On duty more than 13 hours in offices operated only during the daytime.					
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Cumberland & Pennsylvania R. R. Co.	18	29								18	29								36	58	
Cumberland Valley R. R. Co.	26	6								129		1		71	35				155	77	36
Danville & Western Ry. Co.	32	48	6														1		32	49	6
Delaware & Hudson Co.	604	1,769	217									2	98	261	54	3	43	15	705	2,073	288
Delaware, Lackawanna & Western R. R. Co.	824	473	162					2		8	2	2	29	72	17	18	7	6	879	556	187
Denver & Rio Grande R. R. Co.	1,558	1,629	610	2	3	3	7		1	42	76	48	258	124	41	48	43	41	1,915	1,875	744
Denver & Salt Lake R. R. Co.	497	1,306	585		12		2			6	73	38		25	4	6	6	1	511	1,422	628
Denver, Boulder & Western R. R. Co.		47																		47	
Detroit & Mackinac Ry. Co.	15	10	21									7	26	3					41	13	28
Detroit & Toledo Shore Line R. R. Co.	193	113	39								20			1					193	134	39
Detroit, Grand Haven & Milwaukee Ry. Co.	336	184	21										36	21	22		51	6	372	256	49
Detroit, Toledo & Ironton Ry. Co.	1,185	468	472	1						38	15		8		12	5	1	4	1,237	484	488
Duluth & Iron Range R. R. Co.	124	85	54								10								124	95	54
Duluth & Northeastern R. R. Co.		34																		34	
Duluth, South Shore & Atlantic Ry. Co.	305	330	65	5									1	20	2	5	15	11	316	365	78
Duluth, Winnipeg & Pacific Ry. Co.	141	103	10	3					3	5			4	12	6			5	153	115	24
Elgin, Joliet & Eastern Ry. Co.	1,912	748	145							56			25	17	7				1,993	765	152
El Paso & Southwestern System	351	360	173		3	1				16	9	12	14	17	17	22	12	3	403	401	209
Erie R. R. Co.	5,432	2,199	488						4	19	2	12	1,203	859	194	191	118	33	6,845	3,178	701
Escanaba & Lake Superior R. R. Co.	5	5	25								5					1			6	10	25
Flint River & Northeastern R. R. Co.	53	6								6									59	6	
Florence & Cripple Creek R. R. Co.	121	227	183								5			14					121	246	183
Florida East Coast Ry. Co.	189	100	42			6				5	4	6			8				194	104	62

Fort Dodge, Des Moines & Southern R. R. Co.	48	8	34																48	8	34
Fort Smith & Western R. R. Co.	31	58	25			1				5	5	5				1		1	37	63	32
Fort Worth & Denver City Ry. Co.	296	400	494	14	5	15				19	10	18	126	124	122	4		19	459	539	668
Fort Worth & Rio Grande Ry. Co.	74	20	92																74	20	92
Gainesville & Northwestern R. R. Co	......	67	29		5			5			62	9							......	139	38
Galveston, Harrisburg & San Antonio Ry. Co.	474	359	270		2	5				1	26	18	175	103	74	80	9	7	730	499	374
Georgia & Florida Ry. Co.	372	81	111							8			6			1		1	387	81	112
Georgia, Florida & Alabama Ry. Co.	75	14	15													3			78	14	15
Georgia Railroad	297	153	89				11					2					1	1	308	154	92
Georgia Southern & Florida Ry. Co.	375	82	120	1							6	2	13	4	6	14	15	12	404	107	140
Gilmore & Pittsburgh R. R. Co.	37	......	2																37	......	2
Grand Rapids & Indiana Ry. Co.	127	74	37	1							5	2	102	27	39	3	3	4	237	110	83
Grand Trunk Western Ry. Co.	2,337	347	234										24	2	6				2,361	349	240
Great Northern Ry. Co.	2,923	1,517	430	66	4			10		35	8	2	98	96	64	56	12	4	3,178	1,647	501
Gulf & Ship Island R. R. Co.	153	201	122																153	201	122
Gulf, Colorado & Santa Fe Ry. Co.[1]	2,089	1,622	708	10	6					102	76	40	183	142	90	44	27	14	2,428	1,873	852
Gulf, Texas & Western Ry. Co.	15	74	28																15	74	28
Hagerstown & Frederick Ry. Co.	75	48	60	57	25	29				2	1								134	74	89
Hocking Valley Ry. Co.	861	843	79					5					54	58	2		2		915	908	81
Houston & Shreveport R. R. Co.[2]	......	......	40									5							......	......	45
Houston & Texas Central R. R. Co.	118	228	157				5				16	11	60	50	89	17	19	7	200	313	264
Houston East & West Texas Ry. Co.	93	325	214									11			1				93	325	226
Huntingdon & Broad Top Mountain R. R. & Coal Co.	26	8	7																26	9	7
Illinois Central R. R. Co.	19,163	1,909	520	25	6			6		406	60	22	1,077	449	202	91	87	38	20,762	2,517	791
Illinois Southern Ry. Co.	144	103	34							1			15					1	160	103	35
Illinois Traction System	35	79	25							3		7		4					38	87	32
Indiana Harbor Belt R. R. Co.	216	200	48										12	14	8				228	214	56
Indianapolis & Cincinnati Traction Co.	19	4	......							6									25	4	1
International & Great Northern Ry. Co.	213	126	532			10				4	10	36	30		39	2	6	23	249	142	640
Jonesboro, Lake City & Eastern R. R. Co.	273	143	40	36	5					5				2			1		314	151	40
Kanawha & Michigan Ry. Co.	347	313	27							31		6	18	7	2	1	2	2	397	322	37
Kanawha & West Virginia R. R. Co.	9	17	10								17								9	34	10
Kansas City, Clinton & Springfield Ry. Co.	20	5	20							5	4			13	3		26	61	25	48	84
Kansas City, Mexico & Orient Ry. Co.	280	161	249			35						5	10	8	3	14	5	44	304	174	336
Kansas City, Mexico & Orient Ry. Co. of Texas	48	918	1,254		1					26	2	41		4	4		9	11	74	934	1,311
Kansas City Southern Ry. Co.	1,145	947	786				6	4	8	60	42	21	120	131	97	21	35	25	1,352	1,159	938
Kansas City Terminal Ry. Co.	8	......	2										48	10	7				-56	10	9
Kentwood & Eastern Ry. Co.	62	53	15							2									64	53	15
Lake Champlain & Moriah R. R. Co.	13	......	......	13															26	......	......
Lake Erie & Western R. R. Co.	256	124	45					2		8	22	12	101	75	17	10	2		375	225	74

[1] Includes the figures for the Gulf & Interstate Ry. Co. of Texas, the Texas & Gulf Ry. Co., and the Pecos & Northern Texas Ry. Co. between Coleman and Sweetwater, Tex.
[2] Figures for the years ending June 30, 1913 and 1914, are included with those for the Houston East & West Texas Ry. Co.

Table IV.—*Summary of all instances of excess service reported by the designated carriers as having occurred on their respective lines during the fiscal years ending June 30, 1913, 1914, and 1915*—Continued.

Name of railroad.	Employees in train service.												Telegraph operators.						Total of all instances.		
	Continuing on duty for longer periods than 16 consecutive hours.			Returning to duty after 16 hours' continuous service without having had 10 consecutive hours off duty.			Returning to duty after aggregate service of 16 hours without having had 8 consecutive hours off duty.			Continuing on duty after aggregate service of 16 hours.			On duty more than 9 hours in continuously operated day-and-night offices.			On duty more than 13 hours in offices operated only during the daytime.					
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Lake Shore & Michigan Southern Ry. Co.	1,355	650	53		3	2				14	10	11	115	72	62	5	2		1,489	737	128
Lakeside & Marblehead R. R. Co.		5						12		20	25								20	42	
Laurel Fork Ry. Co.	6	26	3																6	26	3
Lehigh & Hudson River Ry. Co.	83	82	35								1			7	5		1		83	91	40
Lehigh & New England R. R. Co.	117	18	8				1						1	18					119	36	8
Lehigh Valley R. R. Co.	1,406	963	703							185	476	205	121	102	56	10	1		1,722	1,542	964
Lewiston, Augusta & Waterville Street Ry. Co.		4											11	56	7				11	60	
Long Island R. R. Co.	423	759	405							10	1		5	79	29		2	3	438	841	437
Louisiana & Arkansas Ry. Co.	129	50	19		1					1			34	22	16	1	7	9	165	80	44
Louisiana & Northwest R. R. Co.	190	114	77				7			4									201	114	77
Louisiana Ry. & Navigation Co.	412	669	574							51	19	74	1	43	18		19	28	464	750	694
Louisiana Western R. R. Co.	22	18	31									2	25	2	3	3		1	50	20	37
Louisville & Nashville R. R. Co.	5,833	3,558	716	10	3	1	9			256	169	84	302	196	110	54	35	9	6,464	3,961	920
Louisville, Henderson & St. Louis Ry. Co.	65	11								3		1		2	1			3	68	13	5
Lowville & Beaver River R. R. Co.	15		4	15															30		4
McCloud River R. R. Co.	26	22	18																26	22	18
Macon & Birmingham Ry. Co.	34	11	42															3	34	11	45
Macon, Dublin & Savannah R. R. Co.	50	14			5					16	5				2				66	24	2
Maine Central R. R. Co.	94	64	25							1			195	135	114	112	86	37	402	285	176
Manistee & Northeastern R. R. Co.	25	5	23									1							25	5	24
Marshall & East Texas Ry. Co.	167	358	179								5								167	363	179
Maryland & Pennsylvania R. R. Co.	64	60	161													7			71	60	161
Michigan Air Line Ry. Co.	8	39	4																8	39	4
Michigan Central R. R. Co.	1,063	848	115				5		1	136	126	15	70	51	36	9		3	1,283	1,025	170
Midland Terminal Ry. Co.		33	20																	33	20
Midland Valley R. R. Co.	181	420	42		10			8		22	26			3	2	2	15	3	205	482	47

Milford, Attleboro & Woonsocket St. Ry. Co.		7	19									20								14	39
Minneapolis & St. Louis R. R. Co.	763	391	557			12				4		20	26	103	26	27	72	30	820	567	645
Minneapolis, St. Paul & S. Ste. Marie Ry. Co.	1,135	754	365	2	6	4	10	11	4	31	30	19	294	376	245	207	61	29	1,679	1,238	666
Minneapolis, St. Paul, Roch. & D. Elec. Trac. Co.		21	153		4	7														25	160
Minnesota & International Ry. Co.	103	19	5										8		6				111	19	11
Mississippi Central R. R. Co.	94	31	27																94	31	27
Missouri & North Arkansas R. R. Co.	249	238	145		5		5			3		16	2	3	11	4	8	14	263	254	186
Missouri, Kansas & Texas Ry. Co.	414	649	1,547	6		5				6	33	20	99	80	91	4	108	173	529	871	1,836
Missouri, Kansas & Texas Ry. Co. of Texas	434	2,144	1,124						10		47	23		81	47		81	46	434	2,353	1,250
Missouri, Oklahoma & Gulf Ry. Co.	489	1,015	481	5			10	25	5									2	504	1,040	488
Missouri Pacific Ry. Co.	1,888	938	1,540	10		24				31	3	58	195	252	263	49	43	117	2,173	1,236	2,002
Missouri Southern R. R. Co.		25			6															31	
Mobile & Ohio R. R. Co.	933	895	233							11	10	2	52	104	34	3	1	2	999	1,010	271
Monongahela R. R. Co.	133	21	8				2	2		5		7							140	23	15
Morgan's La. & Texas R. R. & S. S. Co.	107	32	115			6				21			30	18	5	2			160	50	126
Morgantown & Kingwood R. R. Co.	14		6							15		6							29		12
Munising, Marquette & Southeastern Ry. Co.	25	28	7													1			26	28	7
Nashville, Chattanooga & St. Louis Ry. Co.	952	222	206	11	3	4				42	50	28	159	139	78	21	18	3	1,185	432	319
Nevada-California-Oregon Ry. Co.	44	44	97			4					7								48	51	105
Newell Bridge & Ry. Co.								9		3	30								3	39	3
New Iberia & Northern R. R. Co.	97	37	28																97	37	28
New Jersey & New York R. R. Co.	4	41												7		6	30	5	10	78	5
New Jersey & Pennsylvania Trac. Co.													24	724	707				24	724	707
New Mexico Central R. R. Co.	4	9	22							2	2								6	11	26
New Orleans & Northeastern R. R. Co.	431	334	41			5				102	15		116	40	3	9	5	3	658	394	52
New Orleans Great Northern R. R. Co.	302	138	94							1				8	4	3	2	7	306	148	111
New Orleans, Mobile & Chicago R. R. Co.	2,880	38	18							9	5						1	3	2,889	44	21
New Orleans Terminal Co.													28	40	2		2		28	42	7
New Orleans, Texas & Mexico R. R. Co.	141	40	31									5	1	12	2		3	4	142	55	42
New York & Long Branch R. R. Co.	6	34												2			4		6	40	
New York Central R. R. Co.	16,270	3,103	102	8						170	77	18	536	207	79	179	51	28	17,163	3,438	227
New York, Chicago & St. Louis R. R. Co.	1,292	1,314	56										118	102	25	13	6	2	1,426	1,422	83
New York, New Haven & Hartford R. R. Co.	607	224	30	2			2			43	21	9	969	714	334	42	84	18	1,665	1,043	391
New York, Ontario & Western Ry. Co.	40	118	26							17	14		195	143	109	34	15	5	286	290	141
New York, Philadelphia & Norfolk R. R. Co.	46	2	2										6	4	3			1	52	6	6
New York, Susquehanna & Western R. R. Co.	89	35	16							2	3		131	159	28	2	15		224	212	44

TABLE IV.—*Summary of all instances of excess service reported by the designated carriers as having occurred on their respective lines during the fiscal years ending June 30, 1913, 1914, and 1915*—Continued.

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	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Norfolk & Western Ry. Co.	5,190	4,06 8	1,146		3					19	43	11	150	77	26	17	3	9	5,376	4,194	1,192
Norfolk Southern R. R. Co.	141	282	100								5				2				141	287	102
North-East Pennsylvania R. R. Co.		11	4											7			10	10		28	14
Northern Alabama Ry. Co.	164	76	6											5	2		2	4	164	83	12
Northern Pacific Ry. Co.	6,840	2,812	1,009	56	68	5	4		3	435	223	70	362	145	97	82	38	16	7,779	3,286	1,200
Northwestern Pacific R. R. Co.	40	21	86							3	2	3	1	2	5		5	5	44	30	99
Norwich & Westerly Traction Co.			14			13			2			2						4			31
Ohio & Kentucky Ry. Co.	22	10	15							1						5	7		28	17	19
Ohio Electric Ry. Co.		26																		26	
Ohio River & Western Ry. Co.	71	115	51	8								1							79	115	52
Ohio Valley Electric Ry. Co.	5	25			6														5	31	
Oklahoma Central Ry. Co.	15	32																	15	32	
Orange & Northwestern R. R. Co.	39	20	45																39	20	45
Oregon Short Line R. R. Co.	779	389	70		7	5				30	37	15	74	29	55	27	13	1	910	475	146
Oregon-Washington R. R. & Navigation Co.	1,114	252	159	17	1	1				28	11	27	58	56	19	23	30	7	1,240	350	213
Pacific & Arctic Ry. & Navigation Co.	106	29	7											9		58	24	1	164	62	8
Pacific & Idaho Northern Ry. Co.	36		4	5															41		4
Pacific Electric R. R. Co.		15	10			3			2		5	9			1					20	25
Pacific Ry. & Navigation Co.	121	21	23	15			1			5		5				8		4	150	21	32
Panhandle & Santa Fe Ry. Co.[1]	79	20	27							6	3	6	133	100	43	5	1		223	124	76
Paris & Mount Pleasant R. R. Co.	14	62	20							5									19	62	20
Pennsylvania Lines West of Pittsburgh	21,091	7,578	713	24	3			3	1	198	102	27	1,371	1,143	282	52	28	12	22,736	8,857	1,035
Pennsylvania R. R. Co.[2]	4,683	3,875	429	9	22	2	36	12		589	422	182	1,202	842	322	15	15	5	6,534	5,188	940
Pere Marquette R. R. Co.	2,662	840	194			4			5				8	2	45	6		434	2,676	842	682
Perkiomen R. R. Co.	6	15	28							6	6	1	1			1			14	21	29
Philadelphia & Chester Valley R. R. Co.		23			2															25	

Philadelphia & Reading Ry. Co	672	652	269		9				3	118	24	32	286	254	126	11	6	6	1,087	945	436
Philadelphia, Baltimore & Washington R. R. Co	161	153	81							41	18	2	147	83	42	7	2	2	356	256	127
Philadelphia, Newtown & New York R. R. Co		15												5		1	11	3	1	31	3
Pittsburgh & Lake Erie R. R. Co	577	208	65				1			66	32	5	233	224	81	3	2		880	466	151
Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Co	5,299	2,115	197	59	7	8				79	36	9	439	241	86	2	48	4	5,878	2,447	304
Pittsburgh, Lisbon & Western R. R. Co	25																		25		
Pittsburgh, Shawmut & Northern R. R. Co	156	651	138																156	651	138
Pontiac, Oxford & Northern R. R. Co	46	27	27											2			1		46	30	27
Potato Creek R. R. Co	46	109	15																46	109	15
Quincy, Omaha & Kansas City R. R. Co	50	51	22		8	1		2									1		50	62	23
Reading & Columbia R. R. Co	6	13									12		1			1	2		8	27	
Richmond, Fredericksburg & Potomac R. R. Co	9											2	66	43	69	2	1		77	44	71
Rio Grande Southern R. R. Co	145	88	60								3			5	1		6		145	102	61
Rock Island Southern Ry. system	31																		31		
Rocky Mountain & Santa Fe Ry. Co.[3]		79	10				8					5							8	79	15
Rutland R. R. Co	234	163	25							7	5		43	43	15	10	20	9	294	231	49
St. Clair Tunnel Ry. Co													31	36	4				31	36	4
St. Joseph & Grand Island Ry. Co	117	88	114	6						2	18		14	7	6	8	5	12	147	118	132
St. Louis & Hannibal Ry. Co		35	60		9	1			4											44	65
St. Louis & San Francisco R. R. Co	4,342	1,290	477		3	16	9	5		82	45	38	712	615	105	67	283	39	5,212	2,241	675
St. Louis, Brownsville & Mexico Ry. Co	1,505	920	322							1			1	3	10	2	7		1,509	930	332
St. Louis, Iron Mountain & Southern Ry. Co	2,059	694	644	16	11	15	5			61	63	43	129	523	131	16	55	30	2,286	1,346	863
St. Louis Merchants' Bridge Terminal Ry. Co	3	2											22	9	7				25	11	7
St. Louis, San Francisco & Texas Ry. Co	15	65	36												1				15	65	37
St. Louis Southwestern Ry. Co	323	239	81										4	9	13	1		1	328	248	95
St. Louis Southwestern Ry. Co. of Texas	550	380	234				4			5		3	7	22	3	3	32	18	569	434	258
San Antonio & Aransas Pass Ry. Co	1,734	1,120	483	3	5				5	5	8		20	1		50	45	12	1,812	1,179	500
San Antonio, Uvalde & Gulf R. R. Co	5	423	148		10			4											5	437	149
Sand Springs Ry. Co	17	12		10	2														27	14	
San Joaquin & Eastern R. R. Co	44	5	4																44	5	4
San Pedro, Los Angeles & Salt Lake R. R. Co	550	336	81		2		3			15	2	10	4	4	12	1	7	2	573	351	105
Seaboard Air Line Ry. Co	1,896	1,344	788		4		10	5		120	45	35	700	585	318	65	25	17	2,791	2,008	1,158
Seattle, Port Angeles & Western Ry. Co			25									5									30

[1] Includes the Pecos & Northern Texas Ry. Co. and the Southern Kansas Ry. Co. of Texas.
[2] Includes the Northern Central Ry. Co.
[3] Formerly the St. Louis, Rocky Mountain & Pacific Ry. Co.

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	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
Sierra Ry. of California	16	13	7								11						7	4	16	31	11
Sligo & Eastern R. R. Co.		20			15															35	
South Dakota Central Ry. Co.	40	74	31							6	11								46	85	31
Southern Pacific Co. (Pacific System)	1,442	1,530	545	2	5	3	13	42	2	222	168	60	137	86	53	39	45	11	1,855	1,876	674
Southern Ry. Co.	6,272	2,852	812	12						215	36	27	802	667	379	41	32	26	7,342	3,587	1,244
Southern Ry. Co. in Mississippi	71	141	67							7	61	5	4		1				82	202	73
Southwestern Missouri R. R. Co.		11			6			5			11		2						2	33	
Spokane & Inland Empire R. R. Co.	85	7	8	11			3			1			7	2			1	2	107	10	10
Spokane International Ry. Co.	39	25	5							4	3			4	4				43	32	9
Spokane, Portland & Seattle Ry. Co.	220	60	29					6		1		1	30	13	6	2	8	1	253	87	37
Staten Island Ry. Co.		57			19									2						78	
Sumpter Valley Ry. Co.	4	105	16		65						2						1		4	173	16
Sunset Ry. Co.	40	6														2			42	6	
Susquehanna & New York R. R. Co.	83	30	67									1				7	3	4	90	33	72
Susquehanna, Bloomsburg & Berwick R. R. Co.	43	16		4				4			4						1		47	25	
Tallulah Falls Ry. Co.	38	5	11													4		1	42	5	12
Tennessee Central R. R. Co.	190	285	80																190	285	80
Terminal R. R. Association of St. Louis		2											37	22	22				37	24	22
Texas & New Orleans R. R. Co.	100	136	108							5	1		76	45	31	10	8	4	191	190	143
Texas & Pacific Ry. Co.	961	1,524	822							85	94	37	13	22	38	8	13	7	1,067	1,653	904
Texas Mexican Ry. Co.	39	16	35														3		39	19	35
Texas Midland R. R. Co.	61	49	5					8											61	57	5
Texas State R. R. Co.	30	5		10	4		13	4											53	13	
Toledo & Ohio Central Ry. Co.	463	769	200		7					19	25	3	74	35	12	2	8		558	844	215
Toledo & Western R. R. Co.	32	16	13	2	4						4	4		10	11				34	34	28
Toledo, Peoria & Western Ry. Co.	51	21	4										1	1					52	22	4
Toledo, Saginaw & Muskegon Ry. Co.	56	79	34								14						106	13	56	199	47

Toledo, St. Louis & Western R. R. Co.	650	1,455								41	23		15	28		4	99		710	1,605	
Tonopah & Tidewater R. R. Co.	23	36	9							4				1		1			28	37	9
Tremont & Gulf R. R. Co.	23	165	64					8											23	173	64
Trinity & Brazos Valley Ry. Co.	184	383	57		20									6	1		5		184	414	58
Ulster & Delaware R. R. Co.	25	12								2			5	1	2	2			34	13	2
Union Pacific R. R. Co.	239	301	240	5	1					36	54	45	17	8	42	28	20	26	325	384	353
Vandalia R. R. Co.	326	455	83		1	5				64	19	13	134	168	95	64	109	36	588	752	232
Vicksburg, Shreveport & Pacific Ry. Co.	33	41	30							6	3		3	5		2	4		44	53	30
Virginia & Southwestern Ry. Co.	19	115	38							5	5		10	42	13	1	2		35	164	51
Virginian Ry. Co.	420	264	171		5		4			3		9	50	39	42	5	6	5	482	314	22
Wabash, Chester & Western R. R. Co.	62	9	18										4			75	22	9	141	31	27
Wabash-Pittsburgh Terminal Ry. Co.	93	24											1	1		1	3		95	28	
Wabash R. R. Co.	9,811	3,064	1,791	5	2	52	10	7	12	42	57	29	2,233	1,085	361	1,014	552	404	13,115	4,767	2,649
Washington & Old Dominion Ry. Co.	33	115	31																33	115	31
Washington, Idaho & Montana Ry. Co.	33										14								33	14	
Washington Southern Ry. Co.	1												34	51	47				35	51	47
Western Maryland Ry. Co.	3,598	4,140	12								2		33	44	1	1	3		3,632	4,189	13
Western Ohio R. R. Co.	4	37	2																4	37	2
Western Pacific Ry. Co.	486	751	271	5	5	5	5			39	46	15	29	39	38	25	32	28	589	873	357
Western Ry. of Alabama	63	63	29																63	63	29
West Jersey & Seashore R. R. Co.	17	23	49						5		2	10	39	33	22	1	5	7	57	63	93
West Side Belt R. R. Co.	138	29																	138	29	
Wheeling & Lake Erie R. R. Co.	248	170												17	13			7	248	187	20
Wichita Falls & Northwestern Ry. Co.	40	153	155		5						5				2		10	7	40	173	164
Wichita Valley Ry. Co.	10	45	195									4							10	45	199
Wilkes-Barre & Eastern R. R. Co.	7	31	4										6	2		1			14	33	4
Winston-Salem Southbound Ry. Co.	19	11	25							10		6			2	1			30	11	33
Wisconsin & Northern R. R. Co.		26			7			7			15									55	
Wrightsville & Tennille R. R. Co.	56	37	10	1	2					2							1		59	40	10
Wyoming & Northwestern Ry. Co.	29	20			2			3				10			2		2	1	29	27	13
Yazoo & Mississippi Valley R. R. Co.	3,859	649	408				5			13	23	14	191	137	72	9	4	3	4,077	813	497
Combined totals of all instances.	263,274	131,881	59,915	886	620	435	283	291	139	6,384	4,644	2,758	26,668	22,254	11,592	4,562	4,188	3,219	302,057	163,878	78,058

St. Louis, Mo., *April 28, 1916.*

Hon. John J. Esch,
House of Representatives, Washington, D. C.

My Dear Sir: Your favor of the 21st instant duly received. I presume that hearings on the omnibus safety appliance bill are now under way.

Anent the attached excerpts copied from the Railway Age Gazette of April 21, if the rules outlined by the commission as a result of its investigations of the accident in question had been in vogue, or if the commission were empowered to formulate and enforce said rules, not only would the Milford accident have been prevented, but the two subsequent accidents at Amherst, Ohio, and Bradford, R. I., with their consequent toll of life, would not to-day be a chapter in the long-drawn crimson record of American railway fatalities.

As to what plea the railroads may use in their opposition to the omnibus safety appliance bill it is not my purpose or desire to gainsay any allegation they may make, but if it comes to a protest against the "enormous outlay" involved in complying with its provisions I can do nothing better, as an offset to any such contention, than submit for the consideration of yourself and committee the words of Mr. L. F. Loree, president of the Delaware & Hudson Railroad, as published in the Railway Age Gazette of April 7, which are in part as follows:

"The direction of industries that no effect has yet sufficied to free from loss of life and permanent physical injury to workers imposes responsibilities that put mere lip service to shame. But it may now be said for those in charge of the railways and anthracite mines that they will always in the future be ready to do what they have done to diminish these losses, to enter upon every experiment that bears reasonable evidence of practicability, to adopt any device or method that approves itself to those who comprehend the difficulties to be overcome.

"Losses of life and limb from industrial accidents are appalling whether many or few. If one human life is lost or human form mutilated by an accident that might have been prevented, the result is appalling in a degree that no statistical summary or comparison can accentuate. Such losses are irreparable and without compensation. It would be as evil to consider pecunairy profits as an offset or excuse as it would be unutterably wicked to seek to derive political advantage or notoriety from these conditions."

The caption of the article embodying these utterances is given as:

THE STATE'S RESPONSIBILITY FOR LOSS OF LIFE.

As a climax to their solemn portence Mr. Loree undertakes to make indefensible the failure of any State to pass stringent laws against trespassers on the property of railroads, but the proposition applies with equal force to those governmental functions in which adequate laws are wanting to require the use of such devices, and the enforcement of such rules and methods as are calculated to minimize danger to both operatives and patrons of railway transportation. To contend that a proposed measure should not be enacted into law because it would entail an expense of "enormous proportions," even though it were clearly in evidence that the measure in question would bring about results most salutary in character and beneficent in its relation to the public weal or industrial conditions is equivalent to subordniating human life to the money mart and making the elements of industrial hazard a contributing factor in augmenting dividends.

However, can such a contention (in all sincerity) be made by the opponents of the omnibus safety appliance bill? The answer to this question is clearly given by the Interstate Commerce Committee's report as submitted on this same measure in the last Congress. The loss of property involved in the frequency of such casualites as have been chronicled in the last three months, the magnitude of pecuniary damages accruing from the sacrifice of human lives, the persistent shortage and delay in transportation facilities, all go to make up an aggregate of catenated tribute to the toll of the accident record which more than offsets the price of safety devices or enforced rules of conservation.

Another phase of the proposition involved in the passage of the omnibus safety appliance bill will make of it an asset to the railroads instead of a liability or drain. The Government is now engaged in appraising railway properties of the country in order to determine, as a prelude to safe investment, the amount of capital actually invested. By way of illustration I will say a certain road whose line connects New York and Washington with terminal facilities at either end has been found to involve outlay of $60,000,000. By careful computation it is found that to inaugurate the automatic block-signal system, including the automatic stop and other safety appliances which

the commission might approve of or stipulate, will involve an outlay of $8,000,000. This sum would automatically increase the assets of the road in question 15 per cent and give it that much more borrowing power as well as warrent the increase of its tariff schedule. The listed bonds from this increment would draw $480,000 per year in interest. On the other hand, the wrecks and consequent loss of life, the delays involved in wrecks that are continually occurring in the absence of any such safeguards, would or could amount to more than the interest on said bonds while such railroad would not have the benefit of the increased asset.

I hope to hear from you at an early date announcing the placing of the proposed bill on the calendar, and that President Wilson will be notified it is one of the measures designed in response to his recommendation in the line of preparedness, and I am satisfied he will approve of it as such.

Very truly, yours,

J. B. Thomas.

3815 Washington Avenue, St. Louis, Mo.

THE FUNCTIONS OF THE DISTANT SIGNAL.

The Interstate Commerce Commission's report on the Milford collision, published in the Railway Age Gazette of April 7, says: (1) That passenger trains should not be run so close together as they were in this case if the dependence is to be placed on the flagman; (2) that there appears to be no reason why these trains, No. 79 and No. 5, should not have been started from New Haven 10 minutes apart; (3) that a train (in a case like this) should immediately slacken its speed on passing a caution signal and that the rules should require this; (4) that where trains are run at high speed, close together, automatic stops should be used.

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DATE DUE			